# WD Sentinel™ DX4000

## Small Office Storage Server

Administrator's Guide

# WD® Service and Support

Should you encounter any problem, please give us an opportunity to address it before returning this product. Most technical support questions can be answered through our knowledge base or email support service at *http://support.wdc.com*. If the answer is not available or if you prefer, please contact WD at the best telephone number shown below.

WD Guardian™ Services premium Technical Support and Extended Warranty services are also available for Small Business Customers. Contact WD Technical support at *http://support.wdc.com* for information about this extra level of support and how to obtain it.

Your product includes 30 days of free telephone support during the 3-year standard limited warranty period. This 30-day period starts on the date of your first telephone contact with WD Technical Support. Email support is free for the entire warranty period and our extensive knowledge base is available 24/7. To help us keep you informed of new features and services, remember to register your product on the Registration page on the user interface or online at *http://register.wdc.com*.

## Accessing Online Support

Visit our product support website at *http://support.wdc.com* and choose from these topics:

- **Downloads** - Download drivers, software, and updates for your WD product.
- **Registration** - Register your WD product to get the latest updates and special offers.
- **Warranty & RMA Services** - Get Warranty, Product Replacement (RMA), RMA Status, and Data Recovery Information.
- **Knowledge Base** - Search by keyword, phrase, or answer ID.
- **Installation** - Get online installation help for your WD product or software.
- **WD Community** - Share your thoughts and connect with other WD users.

## Contacting WD Technical Support

When contacting WD for support, have your WD product serial number, system hardware, and system software versions available.

| | |
|---|---|
| **North America** | |
| English | 855.556.5117 |
| Spanish | 855.556.5117 |
| **Mexico** | 001 8002754932 |
| **South America** | |
| **Chile** | 1230 020 5871 |
| **Venezuela** | 0800 100 2855 |
| **Peru** | 0800-54003 |
| **Uruguay** | 000 413 598 3787 |
| **Argentina** | 0800 4440839 |
| **Brazil** | 0800 7704932 |

| | |
|---|---|
| **Europe (toll free)*** | 00800 ASK4 WDEU (00800 27549338) |
| **Europe** | +31 880062100 |
| **Middle East** | +31 880062100 |
| **Africa** | +31 880062100 |
| **Asia Pacific** | |
| **Australia** | 1 800 42 9861 |
| **China** | 800 820 6682/+65 62430496 |
| **Hong Kong** | +800 6008 6008 |
| **India** | 1 800 200 5789 |
| **Indonesia** | +803 852 9439 |
| **Japan** | 0120 994 120/00531 65 0442 |
| **Korea** | 02 703 6550 |
| **Malaysia** | +800 6008 6008/1 800 88 1908/ +65 62430496 |
| **Philippines** | 1 800 1441 0159 |
| **Singapore** | +800 6008 6008/+800 608 6008/ +65 62430496 |
| **Taiwan** | +800 6008 6008/+65 62430496 |

* Toll free number available in the following countries: Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom.

## Registering Your WD Product

Register your WD product to get the latest updates and special offers. You can easily register your product on the user interface of the product software or online at *http://register.wdc.com*

# Table of Contents

WD® Service and Support . . . . . ii

**1 Important User Information . . . . . 1**

Important Safety Instructions . . . . . 1
Handling Precautions . . . . . 2
Recording Your WD Product Information . . . . . 2
About This Guide . . . . . 3

**2 Product Overview . . . . . 4**

Getting to Know Your WD Sentinel DX4000 Server . . . . . 4
Key Features . . . . . 5
System Requirements and Compatibility Information . . . . . 8
Technical Specifications . . . . . 9
Product Views . . . . . 10
Indicators . . . . . 12
Where to Find Help . . . . . 14

**3 User Roles and Responsibilities . . . . . 15**

Types of WD Sentinel DX4000 Users . . . . . 15
How the WD Sentinel DX4000 Fits into Your Office . . . . . 16

**4 Managing the WD Sentinel Server (Dashboard) . . 17**

Setting up WD Sentinel Server & Connecting Computers . . . . . 17
Accessing the Dashboard . . . . . 17
Performing Dashboard Tasks . . . . . 18
Using the Home Page . . . . . 18
Managing User Accounts . . . . . 20
Managing Computers and Backups . . . . . 20
Managing Server Folders and Hard Drives . . . . . 20
Monitoring Add-ins . . . . . 21
Monitoring System Health and Alerts . . . . . 21
Updating Software . . . . . 24
Managing Server Settings . . . . . 25
Shutting Down the Server . . . . . 28

**5 Managing Storage on the WD Sentinel Server . . . . 29**

WD Sentinel Server RAID Storage . . . . . 29

Using USB Storage . . . . . 30
Replacing a Failed Drive . . . . . 31
Adding Capacity by Adding a Drive . . . . . 33

**6 Using the WD Sentinel Server's Features . . . . . 34**

Using the Launchpad (Internal Users) . . . . . 34
Accessing Shared Folders Over Your Network . . . . . 38
Accessing Computers and Shared Folders Remotely . . . . . 38
Backing up (Windows PC) . . . . . 40
Recovering/Restoring (Windows PC) . . . . . 43
Recovering the WD Sentinel Server . . . . . 45

**7 Best Practices . . . . . 53**

Setting up the WD Sentinel DX4000 . . . . . 53
Setting up Client Computers . . . . . 53
Using the WD Sentinel DX4000 Efficiently . . . . . 53
Replacing Drives . . . . . 54
Sharing Files with External Users . . . . . 54
Shutting Down . . . . . 54

**8 Troubleshooting . . . . . 55**

First Steps Checklist . . . . . 55
Specific Problems and Corrective Actions . . . . . 55

**9 Regulatory and Warranty Information . . . . . 57**

Regulatory Compliance . . . . . 57
Limited Warranty . . . . . 59
GNU General Public License ("GPL") . . . . . 59

**10 Glossary . . . . . 60**

**11 Index . . . . . 63**

1

# Important User Information

Important Safety Instructions
Handling Precautions
Recording Your WD Product Information
About This Guide

## Important Safety Instructions

This device is designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated into this unit will protect you if you observe the following procedures for installation, use, and servicing.

- Follow all warnings and instructions marked on the product.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near any liquids.
- Do not place this product on an unstable surface. The product may fall, causing serious damage to the product.
- Do not drop the product.
- Do not block the slots and openings on the back or bottom side of the chassis; to ensure proper ventilation and reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. Making sure the server is standing upright also helps prevent overheating.
- Operate this product only from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
- If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.
- Never push objects of any kind into this product through the chassis slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock.
- Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - When the power cord or plug is damaged or frayed.
  - If liquid has been spilled on the product.
  - If the product has been exposed to rain or water.
  - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment may result in damage and require extensive work by a qualified technician to return the product to normal condition.
  - If the product has been dropped or the chassis has been damaged.

- If the product exhibits a distinct change in performance, contact WD Customer Support at *http://support.wdc.com*.

**WARNING!** **The WD Sentinel Server uses a lithium battery, type CR2032. There is danger of an explosion if the battery is incorrectly replaced. Replace only with the same or equivalent battery type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.**

## Handling Precautions

WD products are precision instruments and must be handled with care during unpacking and installation. The WD Sentinel server may be damaged by rough handling, shock, or vibration. Be aware of the following precautions when unpacking and installing your external storage product:

- Do not drop or jolt the WD Sentinel server.
- Do not move the unit while it is powered on.
- Do not use this product as a portable drive.

## Recording Your WD Product Information

In the following table, write the serial number and model number of your new WD product found on the label on the bottom of the device. Also, write the purchase date and other notes such as your operating system and version. This information is necessary for technical support.

| |
|---|
| Serial Number: |
| Model Number: |
| Purchase Date: |
| System and Software Notes: |
| |
| |
| |
| |

## About This Guide

This Administrator's Guide provides detailed instructions and information for WD-specific interface elements and functions. Unless otherwise noted, refer to *Microsoft Online Help* for standard interface elements and functions.

This guide uses the following conventions:

| Convention | Used for ... |
|---|---|
| **Bold font** | Names of items on a page such as menus, buttons, option names, fields, and tabs that the user must click or complete and keys the user must press. |
| **Note:** | Extra, but not vital, information |
| **Important:** | Essential Information to know or to prevent problems when using the WD Sentinel server |
| **WARNING!** | Vital information for operating the WD Sentinel server or to prevent damage to the server or your computer. |

2

# Product Overview

Getting to Know Your WD Sentinel DX4000 Server
Key Features
System Requirements and Compatibility Information
Technical Specifications
Product Views
Indicators
Where to Find Help

## Getting to Know Your WD Sentinel DX4000 Server

Congratulations on your purchase of the WD Sentinel DX4000 Small Office Storage Server.

Designed specifically for small business environments, WD Sentinel DX4000 is an easy-to-set-up Small Office Storage Server that provides secure centralized storage, complete data protection, and data access for your employees, clients, and vendors while in the office or working remotely from anywhere with an Internet connection. Featuring hardware and software from industry leaders, WD Sentinel DX4000 delivers a high performance, reliable, cost effective, and easy-to-manage storage server for your office network.

Offering complete data protection for your business, WD Sentinel DX4000 includes WD enterprise-class RAID edition hard drives, support for RAID levels 1 and 5, backup and restore software for up to 25 computers, integrated block level data de-duplication for computer backups, dual Gigabit Ethernet ports, and an optional second power supply for high reliability and availability.

*Note:* RAID stands for Redundant Array of Independent Disks. RAID is a storage technology that provides increased reliability and data protection through redundancy.

The WD Sentinel server offers a full range of powerful features to put you in control to manage and protect your business data. It not only provides a central repository for all of your company information, but also as a backup server for up to 25 computers in your office network, without ever needing to purchase additional backup software licenses.

With its built-in secure Remote Web Access, your employees, local or working remotely, can collaborate with each other and securely access files and customer information, thereby improving productivity and efficiency.

Featuring four hot-swappable tray-less drive bays, WD Sentinel DX4000 provides a wide range of storage capacities, from 4 TB (2 TB usable in RAID 1 configuration) up to 12 TB (9 TB usable in RAID 5 configuration).

## Key Features

**Complete Solution from Industry Leading Technology Partners:** We combined hardware and software from industry leaders to deliver a reliable, secure, and easy-to-manage storage server designed specifically for small office environments.
WD Sentinel DX4000 features:

- WD enterprise-class hard drives—Equipped with up to four WD Enterprise-Class RAID Edition drives (2 TB and 3 TB) that feature high capacity storage, peak performance, and enterprise-class reliability.
- Intel®Atom® processor—Built with an Intel Atom dual core processor inside, WD Sentinel DX4000 can easily handle your small business' day-to-day storage demands.
- Windows® Storage Server 2008 R2 Essentials—Powered by Microsoft's Windows Storage Server 2008 R2 Essentials operating system,
  WD Sentinel DX4000 is a simple-to-use storage server solution for small businesses with easy manageability and powerful storage features on a proven and reliable server platform offering the familiar Windows user experience.

**Simple Server Setup:** Whether you're an IT expert or not, the simple wizard-based setup process allows you to integrate WD Sentinel server into your office network like a pro. Each WD Sentinel server comes pre-installed with the operating system; hard drives pre-configured with RAID protection (units with two pre-installed drives in RAID 1 and units with four pre-installed drives in RAID 5) so the unit is ready to be set up right out of the box.

**Connector Software:** The included Connector software is all you need to seamlessly connect the computers on your network to your WD Sentinel server. Once connected, the computer is configured to automatically back up to the server daily and allows the user to access the server resources.

**Centralized Storage & File Management:** WD Sentinel puts you in control of your business data. The secured centralized storage enables quick file search and retrieval for everyone in your business. Specific user permissions for shared folders allow you to prevent unwanted access to sensitive business documents, such as payroll or contracts.

**Automated Server Driven Backup:** WD Sentinel DX4000 server automatically backs up and saves a complete image of up to 25 computers connected to the server. With all-inclusive data protection, you will never have to purchase other backup software licenses. The users also have an option to initiate an on-demand backup of their computer using their Launchpad interface.

**Secure Remote Access:** Easily connect to your WD Sentinel server from virtually anywhere with a personalized Internet address. The built-in remote access enables you to get to your business data from any browser based device as well as share files and collaborate with customers and business partners. Additionally, you can remotely manage the server, and your employees can securely access their PCs from anywhere.

**Feature Rich Management Dashboard:** The administration Dashboard interface quickly guides you through the common wizard-based management tasks such as managing users, assigning folder permissions, and setting up a backup schedule. It also enables you to monitor the status and health of computers on the network from a single view and helps you ensure that the computers are being successfully backed up on a regular basis.

**File-Folder or Bare Metal Restore:** Restoring data from the server is just as easy. Simply recover individual files and folders or restore an entire computer from image-based backups stored on your WD Sentinel server.

**Block Level De-duplication:** WD Sentinel server features elegant block level de-duplication technology for the computer backup data. A function completely transparent to the users, it enables faster subsequent backups as well as efficient utilization of storage on your server.

**Active Directory Join:** Active Directory join capability enables WD Sentinel DX4000 to easily integrate into your existing infrastructure and networks.

**DLNA Media Server:** With the built-in DLNA media server your employees can access WD Sentinel server's shared media library on the network rather than maintain copies of media files on their individual computers. You can also stream digital content like videos, music, or digital signage for employees, vendors, or clients using remote web access.

**LCD Display Panel:** The LCD display panel on the front of the device allows you to monitor the system status and critical alerts.

**Cross Platform File Sharing:** WD Sentinel DX4000 supports industry standard protocols such as CIFS/SMB and NFS, enabling file sharing across various Windows and non-Windows clients.

**Leading Edge Performance:** With dual Gigabit Ethernet connectivity, WD Sentinel DX4000 delivers read speeds greater than 85 MBps through the Gigabit Ethernet interface. That is up to three times faster than most network drives in this category today. For maximum flexibility there are also 2 SuperSpeed USB 3.0 ports to allow you to connect additional storage devices and experience up to 5 Gb/s transfer rates.

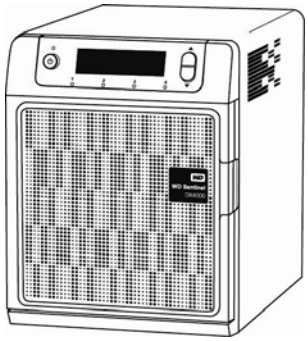
**Automatic RAID Migration and Capacity Expansion:** Adding storage capacity to your WD Sentinel server is as easy as changing a light bulb. Just open the door and add the hard drive in one of the empty storage bays. WD Sentinel server does the rest. It seamlessly migrates to the appropriate RAID level and automatically expands the server's storage capacity. Your users can still access your business data while the new drive is being integrated. No data loss. No downtime.

**Designed for High Availability and Reliability:**

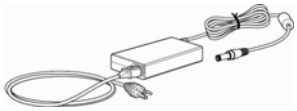
- Each WD Sentinel is pre-configured with WD's reliable and durable enterprise-class RAID edition drives.
- RAID levels 1 or 5 provide another layer of data protection.
- Automatic server-driven backup and restore ensures your data on the computer **or** your network is always protected.
- Dual Gigabit Ethernet ports offer redundancy and high availability.
- Optional dual power supply ensures increased uptime.

## Package Contents

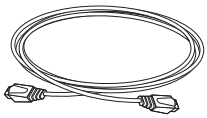
- Small Office Storage Server
- 1 RJ-45 Ethernet cable
- AC adapter with power cord
- Quick Install Guide



WD Sentinel DX4000



AC adapter



Ethernet cable

Quick Install Guide

For information on additional accessories, for example, a drive, additional power adapter, or Ethernet cable visit:

| | |
|---|---|
| US | *www.shopwd.com* or *www.wdstore.com* |
| Canada | *www.shopwd.ca* or *www.wdstore.ca* |
| Europe | *www.shopwd.eu* or *www.wdstore.eu* |
| All others | Contact WD Technical Support in your region. For a list of Technical Support contacts, visit *http://support.wdc.com* and see Knowledge Base Answer ID 1048. |

# System Requirements and Compatibility Information

| Requirement | Description |
|---|---|
| Client Operating System Compatibility | **Windows 7**<br>• Home Basic (x86 and x64)<br>• Home Premium (x86 and x64)<br>• Professional (x86 and x64)<br>• Ultimate (x86 and x64)<br>• Enterprise (x86 and x64)<br>• Starter (x86)<br>**Windows Vista**<br>• Home Basic with Service Pack 2 (SP2) (x86 x64)<br>• Home Premium with SP2 (x86 and x64)<br>• Business with SP2 (x86 and x64)<br>• Ultimate with SP2 (x86 and x64)<br>• Enterprise with SP2 (x86 and x64)<br>• Starter with SP2 (x86)<br>**Windows XP**<br>• Home with Service Pack 3 (SP3)<br>• Professional with SP3<br>• Media Center 2005 with SP3<br>**Mac OS X**<br>• Leopard®<br>• Snow Leopard®<br>• Lion™ *<br><br>* For Mac OS X Lion, ensure that your WD Sentinel server has the latest software updates from Microsoft and Western Digital. |
| Local Network | • Router/switch (Gigabit Ethernet recommended to maximize performance)<br>• DHCP enabled |
| Broadband Access | Required for remote access outside the LAN |

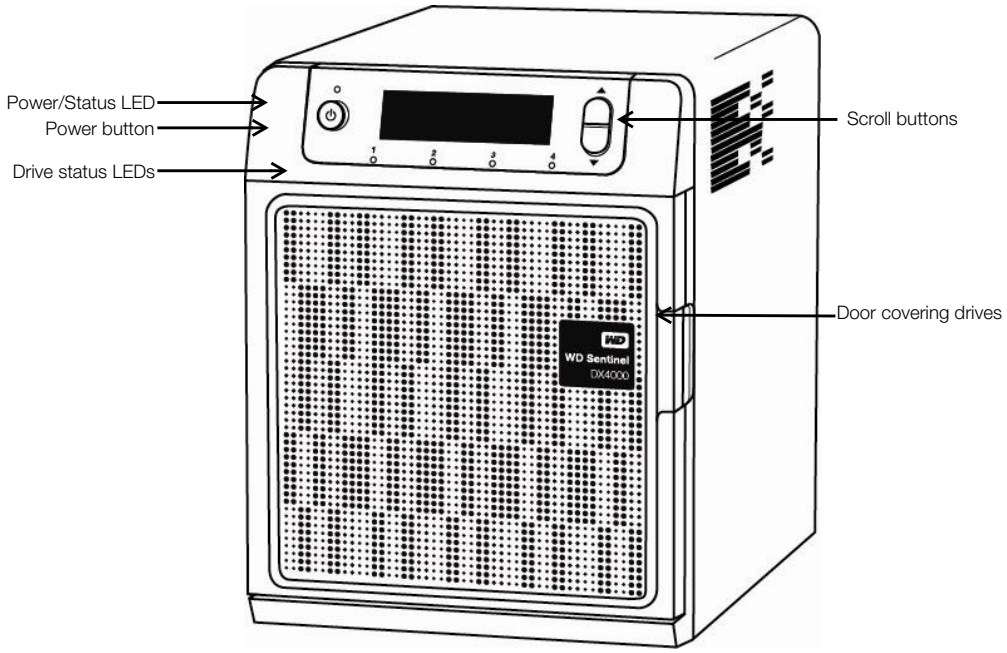
# Technical Specifications

| Specification | Description |
|---|---|
| Interfaces | • High performance (10/100/1000) Gigabit Ethernet connection<br>• 2 ports of powered USB 3.0 |
| I/O ports | • 2 Ethernet (RJ-45 Ports)<br>• 2 USB 3.0 Ports |
| Supported protocols | CIFS/SMB, NFS, HTTP, HTTPS, WebDAV |
| Internal hard drives | **2-4 WD 3.5-inch SATA RAID Edition hard drives with RAID-specific time-limited error recovery (TLER)**<br>Pioneered by WD, this feature prevents drive fallout caused by the extended hard drive error-recovery processes common to desktop drives.<br><br>24x7 reliability<br>With 1.2 million hours MTBF (tested at 100% duty cycle), these drives have the highest available reliability rating on a high-capacity drive.<br><br>Improved rotary vibration tolerance<br>Optimized drive mechanics, system characterization, and process validation yield unmatched performance in high vibration environments.<br><br>Approved Drive Models<br>For a complete list of approved drive models, search for Answer ID 9443 in the WD Knowledge Base at *http://support.wdc.com*. |
| CPU | Intel Atom Dual Core 1.80 Ghz |
| Memory | 2 GBytes SODIMM DDR3-800 |
| Drive bays | • 4 3.5 inch hard drive bays<br>• Hot swap capable<br>• Trayless design |
| RAID level | • RAID 1 (2 drives only) and RAID 5 (3-4 drives)<br>• Automatic migration and capacity expansion |
| Physical dimensions | • Length: 6.3 inch (160 mm)<br>• Width: 8.8 inch (224 mm)<br>• Height: 8.1 inch (206 mm)) |
| Weight | • 4 TB and 6 TB: 10.76 lb (4.88 kg)<br>• 8 TB and 12 TB: 14.0 lb (6.35 kg) |
| Capacities | 4 TB, 6 TB, 8 TB, 12 TB |
| Power | • 2 external power supplies<br>• Redundant failover |
| Power supply | • Input voltage: 100V to 240V AC<br>• Input frequency: 50 to 60 Hz<br>• Output voltage: 19V DC, up to 6.32A |
| Temperature | • Operating temperature: 5 to 35 °C (41 to 95 °F)<br>• Non-operating temperature: -20 to 65°C (-4 to 149 °F) |
| Switches | • Power<br>• Buttons for scrolling through messages on LCD |

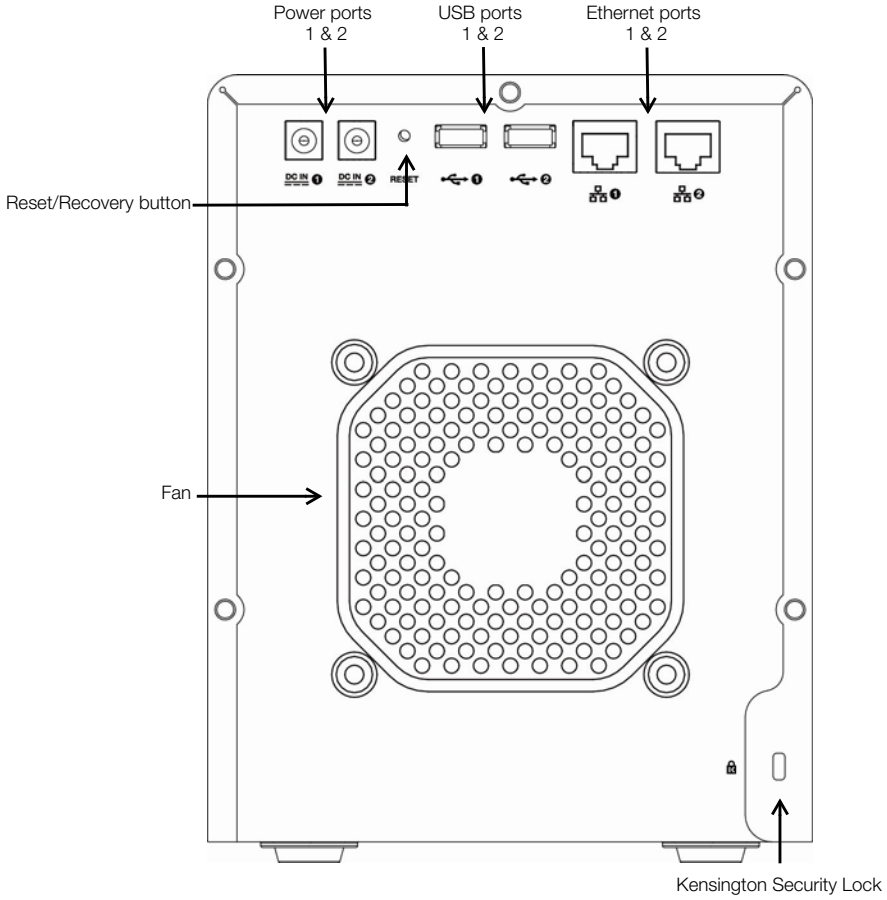
| Specification | Description |
|---|---|
| LEDs | **1 Power LED**<br>• Flashing blue indicates boot status<br>• Flashings red indicates a fault condition<br>• Solid blue once booted, and there are no pending fault conditions, indicates a good operational state<br>**4 Drive Bay LEDs**<br>• Flashing blue or solid blue indicates drive activity<br>• Solid RED indicates drive fault. (Drive must be replaced) |
| LCD panel | 2 lines of 16 characters for status and alerts |
| Operating System | Windows Storage Server 2008 R2 Essentials |
| Backups | 25-client computer support for backup (server based) |
| Recovery | • Bare metal restore<br>• File/folder level restore |

## Product Views

Front View



## Back View




| Component | Icon | Description |
|---|---|---|
| Ethernet ports | | Connect the device to a local network. |
| Power ports | | Connects the device to an AC adapter and the power outlet. |
| Reset /Recovery button | | Button on the back of the server recovers the server (including the operating system) while using a USB drive in an event of an OS corruption. |
| USB ports | | Connects with USB 2.0 or 3.0 devices such as a USB storage or a UPS. |

# Indicators

## LCD

The Liquid Crystal Display (LCD) on the front of the WD Sentinel server is a portal into its status. Normally, the LCD displays the name of the WD Sentinel server that the administrator assigned during initial setup along with its IP address. You can use either of these to discover and communicate with the server. (See the Quick Install Guide for Administrators.)

Use the scroll buttons to the right of the LCD to display:

- Number of drives that are installed
- Available capacity
- Status

If an alert occurs, or the WD Sentinel server is performing certain operations, the following status displays in the LCD:

| Alert | Description |
|---|---|
| Backup Failed | The server failed to back up a computer. Go to the Dashboard and examine the alerts to discover which computer backup failed and why. |
| Capacity Low | Available storage capacity of the WD Sentinel server is low. |
| Drive Overtemp | The temperature of one of the drives is too high. |
| Ethernet 1 Disconnected | WD Sentinel server has detected that Ethernet 1 has lost connection. |
| Ethernet 2 Disconnected | WD Sentinel server has detected that Ethernet 2 has lost connection. |
| Fan Failed | WD Sentinel server has detected that the fan is no longer operational. |
| Imminent Drive Failure | One of the drives is demonstrating imminent failure (discovered through Self-Monitoring Analysis and Reporting Technology S.M.A.R.T). Replace the drive as soon as possible. |
| Initializing | The RAID system is initializing the storage; this is similar to Verifying. |
| Invalid Drive | A drive that is not approved for use in the WD Sentinel server has been inserted. |
| Invalid Drive Capacity | A drive with incompatible size was inserted and migration/rebuild could not proceed. |
| Migrating … % | RAID system is migrating to a larger capacity due to the addition of a drive. |
| Network Disconnected | The server is not connected to the network. |
| Power Supply 1 Failed | Power supply 1 has failed or been disconnected. |
| Power Supply 2 Failed | Power supply 2 has failed or been disconnected. |
| Reboot | WD Sentinel server will reboot. |
| Repairing … % | RAID system is being repaired to full RAID protection. |
| Shutting Down | WD Sentinel server is shutting down. |
| Software Update Available | A WD Sentinel server update is available. Using the Dashboard, apply the update. |
| Storage Degraded | RAID protection is no longer in place, and a drive needs to be replaced. |
| Temperature High | WD Sentinel server has exceed acceptable temperature and will shut down. |
| Verifying … % | RAID system was shut down inadvertently. It is validating and correcting the integrity of the RAID array. |

## LEDs

The LEDs on the Sentinel work in conjunction with the LCD display to further identify the status of the unit.

| LED | Color | State | Description |
|---|---|---|---|
| Power LED | Blue | Flashing | WD Sentinel server is currently booting the software. |
| | Blue | Solid | WD Sentinel server has successfully booted the software and is operational. |
| | Red | Flashing | Indicates that a serious fault has occurred and needs immediate attention. The LCD displays the fault condition. |
| Drive LEDs | Black | Off | If the LED is off while other drive LEDs are on, no drive is installed in the bay. |
| | Blue | Flashing | Drive is currently active. Note that all lights in a RAID system are active at the same time by design. |
| | Red | Solid | Indicates drive failure. The LCD also displays "Storage Degraded." Replace this drive as soon as possible. The system is no longer RAID protected until the drive is replaced and the RAID structure is repaired. |
| Ethernet Port Left LED (on back of server) | Green/Amber | Solid | The left LED indicates the connection speed of the network connection:<br>• Green indicates a 1000 Mb connection<br>• Amber indicates a 100 Mb connection |
| Ethernet Port Right LED (on back of server) | Green | Blinking | Indicates link activity. |

## Where to Find Help

This manual provides step-by-step instructions and other important information regarding your WD product. It is meant for the person serving as the administrator of the WD Sentinel DX4000. You can download translated versions and updates to this manual from *http://products.wdc.com/updates*. For more information and news about this product, visit our website at *http://www.wdc.com/*.

| Additional Reference | Description |
|---|---|
| Quick Install Guide for Administrators | Included in the product box or available at *http://products.wdc.com/WDSentinel;* helps you install the WD Sentinel server and gets you started using it. |
| WD Online Help | Specific descriptions and instructions accessed on WD-specific (Monitor) pages on the Dashboard. |
| Microsoft Online Help | • Access detailed explanations and instructions for a particular page by clicking the **Help** button at the top right of the Dashboard.<br>• Search for help on a specific topic or term by entering it in the Microsoft Online Help search field at the top right of the page.<br>• Access the entire Microsoft Online Help system by clicking *Microsoft Online Help*. |

**Important:** Not all Microsoft Online Help is applicable to the WD Sentinel DX4000. The WD Online Help and this Administrator's Guide take precedence over the Microsoft Online Help.

3

# User Roles and Responsibilities

Types of WD Sentinel DX4000 Users
How the WD Sentinel DX4000 Fits into Your Office

This chapter reviews how the WD Sentinel server fits into your office and delineates the tasks for which the Administrator and Users have responsibilities.

## Types of WD Sentinel DX4000 Users

At a high level there are two categories of users who need to access one or more features of your WD Sentinel server.

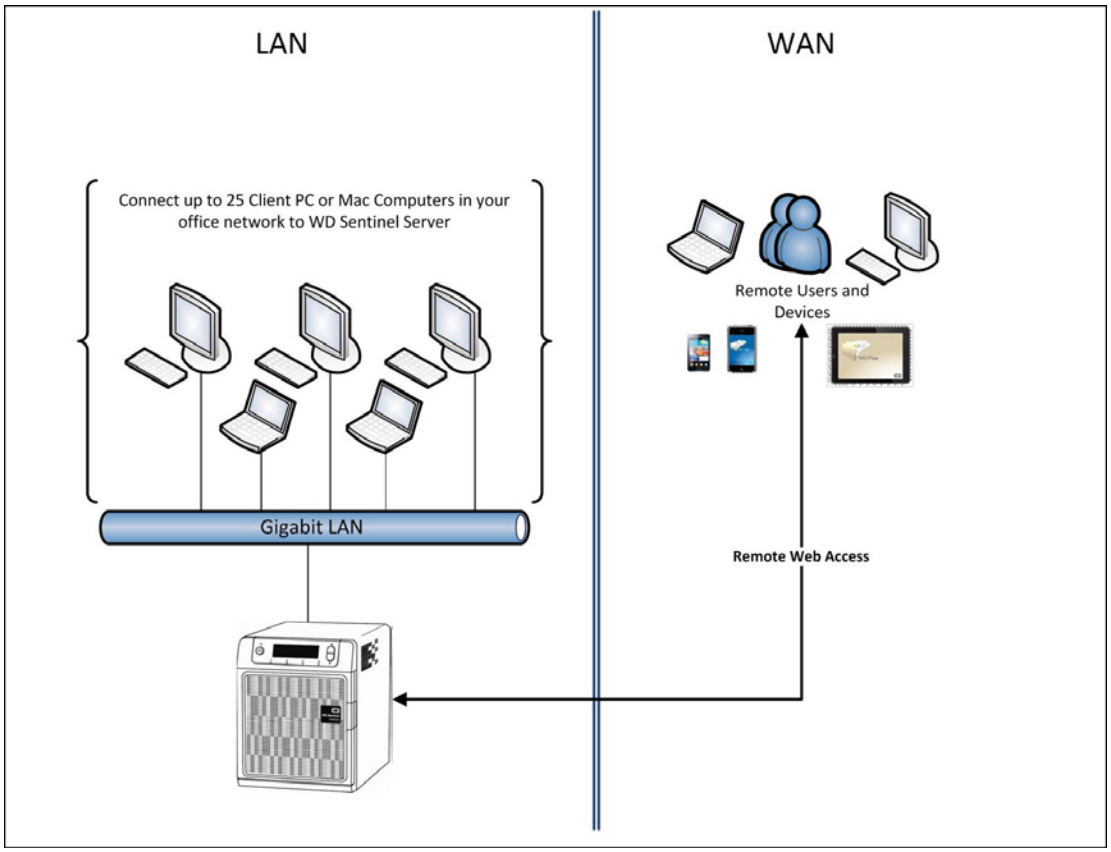
- **Administrator**—This is the person who performs the setup and routine management tasks on the WD Sentinel server. This person is also the holder of the Administrator password of your WD Sentinel server.
- **Users**—You can have up to 25 user accounts on your WD Sentinel server. These can be:
  - **Internal Users** – The internal users are typically the employees (including the Administrator) in your office, working locally or occasionally from a remote location (e.g. Sales Staff), who need to access business data and server resources.
  - **External Users** – The external users are the customers and business partners with whom you need to exchange business data.

The WD Sentinel server offers different paradigms for each type of user. The table below provides a view into the usage model and tasks for each category of users.

| Administrator (e.g., Business Owner) | Internal Users (e.g., Employees) | External Users (e.g., Clients or Business Partners) |
|---|---|---|
| **Primary Setup Tasks**<br>• Physically connects the WD Sentinel server to the network.<br>• Configures the WD Sentinel server itself. This is a one-time procedure.<br>• Connects a Windows PC to the WD Sentinel server by installing Connector software on it. | **Primary Setup Tasks**<br>• None | **Primary Setup Tasks**<br>• None |
| **Primary User Interface**<br>• Dashboard - Signs in using the Administrator password (no username required). | **Primary Interface**<br>• Launchpad - Signs in using the assigned user name and password.<br><br>**Secondary Interface**<br>• Remote Web Access - While accessing remotely, signs in using the assigned user name and password. | **Primary Interface**<br>• Remote Web Access - Signs in using the assigned user name and password. |

| Administrator (e.g., Business Owner) | Internal Users (e.g., Employees) | External Users (e.g., Clients or Business Partners) |
|---|---|---|
| **Dashboard Task Examples**<br>• Sets up user accounts and assigns permissions.<br>• Manages shared folders.<br>• Sets up and manages automatic backup schedule.<br>• Manages WD Sentinel server settings, resolves any alerts, and monitors server performance.<br>• Sets up Remote Web Access.<br>• Manages updates. | **Launchpad Task Examples**<br>• Accesses data on shared storage.<br>• Starts manual backups.<br>• Launches Remote Web Access.<br><br>**Remote Web Access Task Examples**<br>• Accesses data on shared storage.<br>• Connects to the PCs in the office remotely.<br>• Accesses media library. | **Remote Web Access Task Examples**<br>• Accesses data on shared storage.<br>• Accesses media library. |
| *Note:* For each user account, the WD Sentinel server enables the Administrator to set granular permissions for various shared folders as well as server resources, such as Remote Web Access. At all times, the users are only able to access the data on the server and other server resources for which they have permissions. | | |

## How the WD Sentinel DX4000 Fits into Your Office


LAN
WAN
Connect up to 25 Client PC or Mac Computers in your office network to WD Sentinel Server
Remote Users and Devices
Gigabit LAN
Remote Web Access

# 4 Managing the WD Sentinel Server (Dashboard)

Setting up WD Sentinel Server & Connecting Computers
Accessing the Dashboard
Performing Dashboard Tasks
Using the Home Page
Managing User Accounts
Managing Computers and Backups
Managing Server Folders and Hard Drives
Monitoring Add-ins
Monitoring System Health and Alerts
Updating Software
Managing Server Settings

## Setting up WD Sentinel Server & Connecting Computers

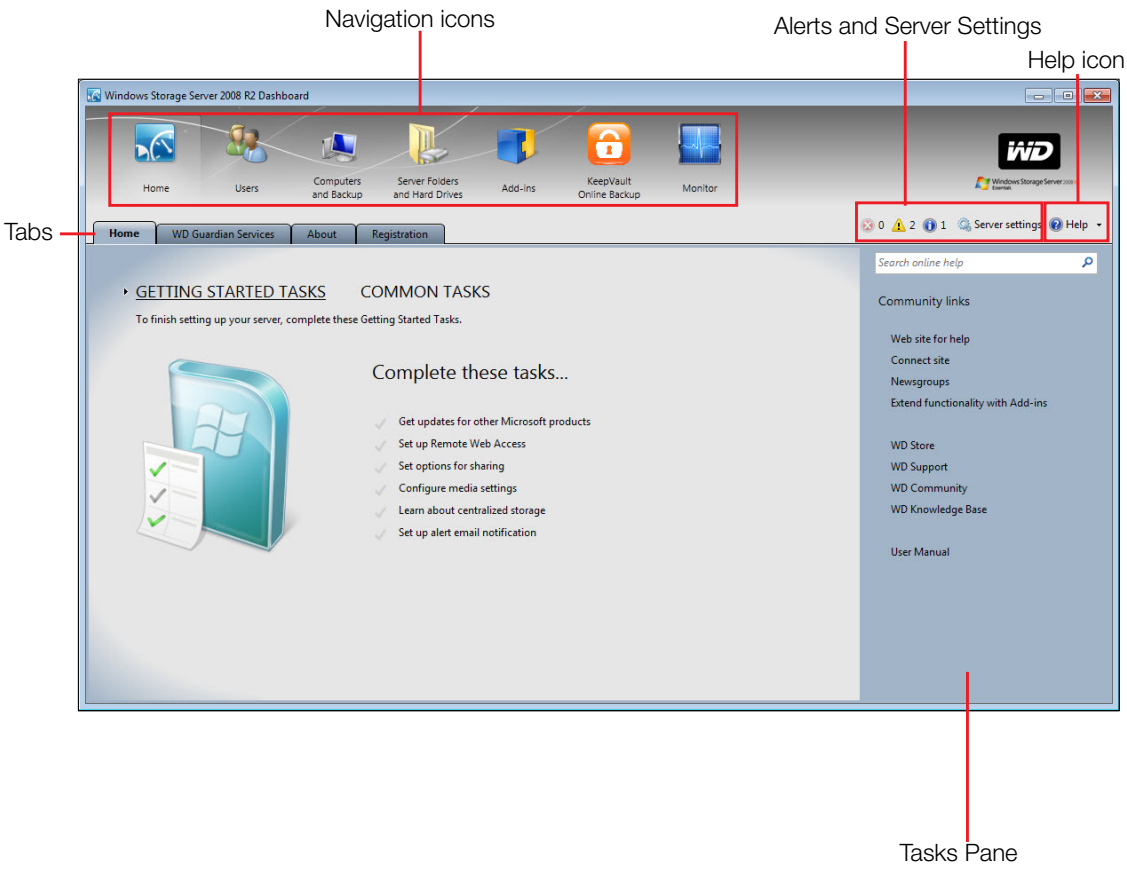
This chapter assumes you have followed the Administrator's Quick Install Guide to initialize the WD Sentinel server and connect computers, and that you are familiar with the Dashboard and Launchpad. To review the setup steps, please see the hard copy guide that came in the box, or access the soft copy at *http://products.wdc.com/wdsentinel.*

## Accessing the Dashboard

**To access the Dashboard:**

1. Click **Start** or **>(All)Program(s) >Windows Storage Server 2008 R2>Windows Storage Server 2008 R2 Dashboard.**
2. On the Dashboard Sign in page, enter the Administrator password (created during setup) and click the **right arrow**:

The Dashboard Home page displays:



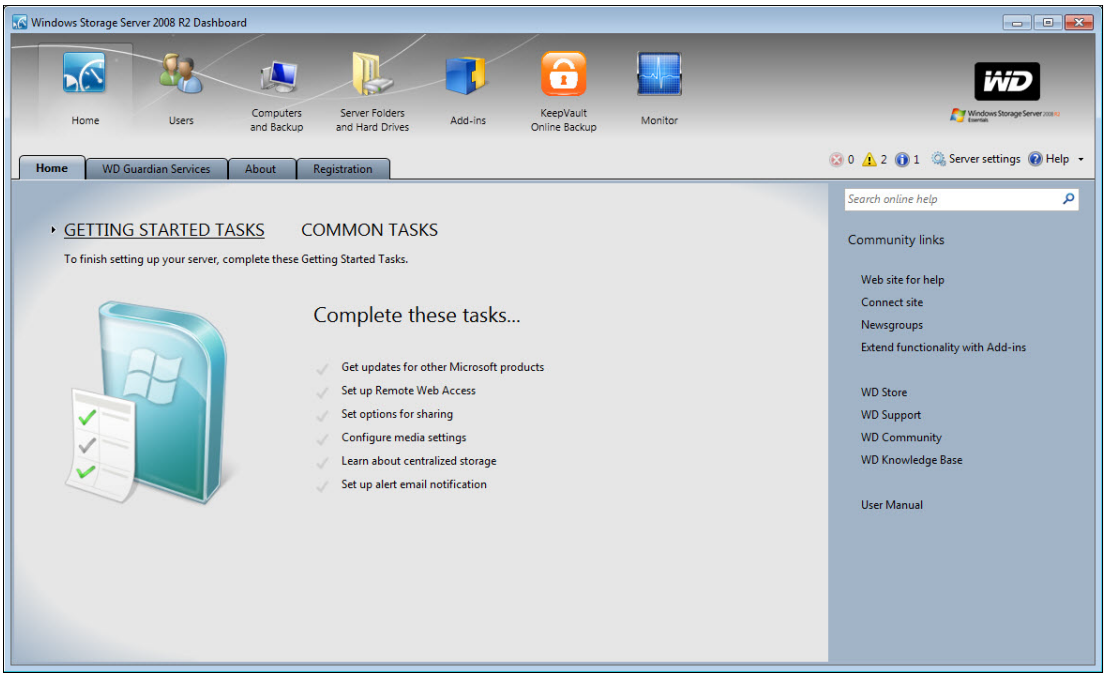

## Performing Dashboard Tasks

The Administrator uses the Dashboard to perform administrative tasks such as creating user accounts, setting up access privileges to shared folders and other server resources, managing shared folders, and monitoring the WD Sentinel server.

For information about an additional task, backing up a computer to the WD Sentinel server, see “Backing up (Windows PC)” on page 40.

## Using the Home Page

The main part of the Home page lists some of the recommended tasks to perform the first time you sign in to the Dashboard. To perform these tasks from the Home page, just click the relevant links. The panel on the right offers easy access to the WD Sentinel DX4000 community and to WD resources. The rest of this chapter discusses the tasks the Administrator can perform on the Dashboard.




For a full description of the typical components of a page, including the Critical, Warning, and Informational Alert icons, see the *Microsoft Online Help*.

## Home Page Tabs

The Home page contains four tabs, summarized below:

| Tab | Description |
|---|---|
| **Home** | Complete basic tasks that will get you started with the WD Sentinel server. For information about these tasks, see the *Microsoft Online Help.*<br><br>**Best Practices:**<br>• Complete the Getting Started tasks on the Home page of the Dashboard.<br>• **Create at least one active user account the first time you access the Dashboard.** |
| **WD Guardian Services** | Western Digital offers WD Guardian Services for Small Business customers. Choose from various technical support plans and extended warranty services that work best for your business. For more information, visit *http://www.wdc.com*. |
| **About** | Displays basic information such as product serial number, IP address, and software version. |
| **Registration** | Allows you to register your server with WD. Once registered you will receive notifications of product and firmware updates, newsletter, information about new product, and services as well as periodic special offers from WD.<br>Enter the required information and click **Register**. Optionally, enter the **Partner ID** of the WD Partner who helped you purchase or install your WD Sentinel server. |

## Home Page Tasks Panel

In the panel on the right of the Home page displays links to useful WD websites and resources to make the best of your WD Sentinel server.

## Managing User Accounts

On the navigation bar, click the **Users** icon. You can now:

- View, add, manage, delete, and activate/deactivate user accounts.
- Use the guest account
- Manage domain user accounts
- Manage passwords
- Manage Remote Web Access
- Assign user access privileges to shared folders and server resources

For detailed instructions on performing any of these tasks, consult *Microsoft Online Help*.

## Managing Computers and Backups

After you've connect your computers to the Windows Storage Server 2008 R2 Essentials network, you can manage the computers from a central location in the Computers and Backup section of the Dashboard including.

- Viewing a list of computers connected to your server.
- Viewing computer properties and health alerts for each connected computer.
- Setting up and managing computer backups.
- Restoring files and folders to computers.

For detailed instructions on performing any of these tasks, consult *Microsoft Online Help*.

## Managing Server Folders and Hard Drives

The WD Sentinel DX4000 contains two tabs:

- The **Server** tab allows you to view and manage the properties of the shared folders on your server including:
  - Managing your company's shared folders
  - Accessing shared folders locally or remotely
  - Uploading or download files locally or remotely
  - Playing media locally or remotely
- The **Hard Drives** tab allows you to view and check the health of the drives that are attached to your server.

For detailed instructions on performing any of these tasks, consult *Microsoft Online Help*.

## Monitoring Add-ins

The Add-ins section of the Windows Storage Server 2008 R2 Essentials Dashboard includes tasks that help you view and manage the Add-ins that are installed on the server.

For detailed instructions on monitoring add-ins, consult *Microsoft Online Help*.

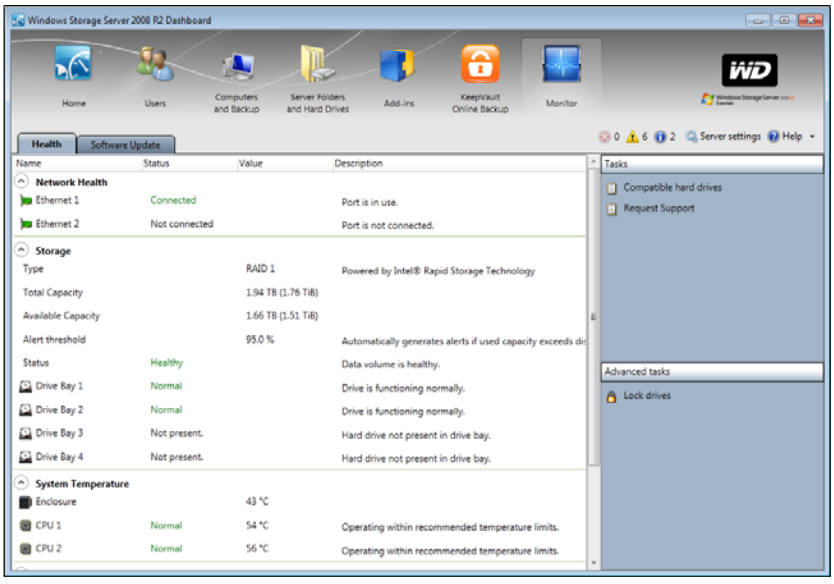
## Monitoring System Health and Alerts

The Monitor module of the Dashboard includes tasks that help you view and manage the WD Sentinel server storage system. To open the Monitor module, click the **Monitor** icon on the navigation bar. The Monitor module includes two tabs, **Health** and **Software Update**, and related tasks in the panel on the right.

### Health Tab

The **Health** tab and related tasks enable you to monitor the status of the storage drives, RAID configuration, power supplies, temperatures, fans, CPU, and network connections.

To open the **Health** tab, click the **Monitor** icon on the navigation bar:




| Settings | Description |
|---|---|
| Network Health<br>Ethernet 1 & 2 | Displays the status (Connected or Not connected) of the server's network connection(s). If you use both Ethernet ports and one fails, the other takes over, allowing the WD Sentinel server to remains operational over the network. |

| Settings | Description |
|---|---|
| Storage | Displays storage information associated with the WD Sentinel server. The WD Sentinel server holds up to four of WD's enterprise-class drives and features RAID levels 1 or 5 to enhance performance and data protection.<br><br>RAID is an acronym for Redundant Array of Independent Disks. With two drives installed, the WD Sentinel server uses RAID 1 (mirror). With three or four drives installed, the server uses RAID 5, which offers fast performance by striping data across all drives. This arrangement protects data by dedicating a quarter of each drive to fault tolerance, leaving three quarters of the system capacity available for data storage.<br><br>**Type:** RAID level<br><br>**Total Capacity:** Maximum amount of storage space (TB) available.<br><br>**Available Capacity:** Amount of storage (TB) left available for use.<br><br>**Alert Threshold:** The percentage of storage capacity used above which you receive alert notifications that the storage is approaching maximum threshold.<br><br>**Status:** The status of the server storage may be:<br>• Healthy–All drives are in the optimal state.<br>• Degraded–A single drive failed; data is protected, but performance is degraded. (A failed drive must be replaced with a healthy drive as soon as possible to fully protect your server and data.)<br><br>**Status of drives 1-4:** The status of a drive may be:<br>• Normal<br>• Failed!: Visit WD Store to replace.<br>CAUTION: Imminent failure detected. Please replace this hard drive immediately. |
| System temperature | **Enclosure**: The temperature within the server enclosure.<br><br>**CPUs 1 & 2**: The Temperature, status, and status description for each CPU. (The server does not have two physical CPUs but instead uses a dual core CPU. CPU 1 and CPU 2 represent the details for each core.) The status may be:<br>• Normal<br>• Warm<br>• Hot |
| Fan | The status of the server's cooling fan may be:<br>• Active<br>• Inactive<br>Speed of revolutions in RPMs. |
| Power Supplies 1 & 2 | The server has two power supplies. If you use both and one fails, the other takes over and the WD Sentinel server remains operational. The status may be:<br>• Active<br>• Inactive |

# Health Tasks

## Find compatible hard drives

### To view a list of WD drives that can be used in the WD Sentinel server:

1. Click **Compatible Hard Drives** in the Task pane. A pop-up screen lists each drive with its model number, description, and maximum capacity.
2. If desired, click the **WD Store** button to view or buy additional drives.
3. To exit, click **OK**.

## Request Support

The Request Support function collects information about your WD Sentinel and sends a diagnostic report to the WD Support server. It then opens the WD Support website, where you can enter a few details regarding the problem to route it to the appropriate support team.

*Note:* If you do not want to submit the diagnostic logs, use the regular WD Support page at *http://support.wdc.com*.

### To access WD Customer Support automatically:

1. Click **Request Support** in the Tasks pane. The Request Support window displays.
2. After reading the information on the screen, click the "I agree and would like to proceed." checkbox, then click Proceed. The WD Support Ask a Question page displays.

   *Note:* The first time you do this, an Internet Explorer Security Screen displays. Clear the check box and click **Close**.

3. Complete the online form and click **Submit Question**. A diagnostic report of the WD Sentinel server is automatically attaches to the form. Your request is added to the WD Support queue and assigned a confirmation number. You will receive an email from WD Support regarding your question.

**Important:** For faster service/phone service, call WD Support. For the latest phone numbers and contact information in your region, see "Contacting WD Technical Support" on page ii or *http://support.wdc.com*. Have your confirmation ready when you call.

## Lock/Unlock

For security reasons, you can lock or unlock the drives. You cannot lock or unlock an individual drive; you either lock them all or unlock them all, using a password you create here. This password may be but does not have to be the same as the WD Sentinel server Administrator password.

**Important:** Store your password in a secure place. If the password is lost, there is no way to get it back or unlock the drives, and all of its data may be lost.

**To lock the drives:**

1. Click **Lock drives**.
2. In the New Password field, Enter your password.
3. In the Confirm Password field, confirm your password,
4. In the Password Hint field, enter a hint to remind you of the password.
5. Click **OK**.

**To unlock drives:**

1. Click **Unlock drives.**
2. In the Old Password field, enter your password.
3. Click **Unlock drives**.

**To change the password:**

1. Click **Unlock drives**.
2. In the Old Password field, enter the current password.
3. In the New Password field, enter your new Password.
4. In the Confirm Password field, confirm your new password
5. In the Password Hint field, enter a hint to remind you of the password.
6. Click **OK**.

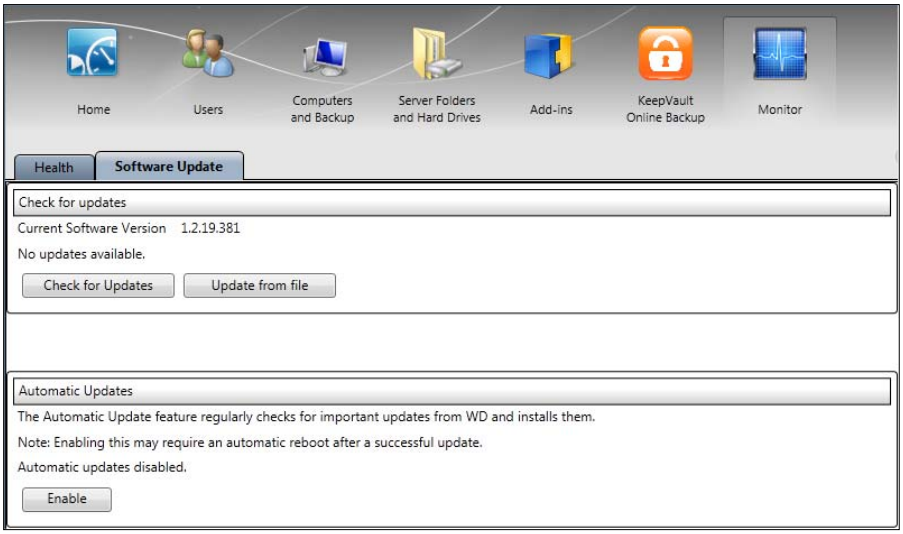
## Updating Software

Periodically, WD issues software updates for your WD Sentinel DX4000 server. The Software Update tab within the Monitor module allows you to update WD Sentinel DX4000 software automatically or manually. Please note that this tab only allows you to apply software updates issued by WD. To manage or apply Microsoft software updates, go to **Server Settings** on the Dashboard.

### Manual Updates of WD Software

**To check for software updates and update the software:**

1. Click the **Software Updates** tab.



2. You have two options. You may check for updates online or update from a file:

   **To use the online update:**

   a. Click **Check for Updates**.

   b. If an update is available, click **Download** and **Install** to update your WD Sentinel server.

   **To update from a file:**

   a. The software update files can also be downloaded from the WD Support site at *http://support.wdc.com*. Once you download the available firmware updates for the WD Sentinel DX4000 server, copy the file to a shared folder such as the Documents share on the server and select the file to update.

   b. Click **Update from file** and then locate and select the update file you copied to your server.

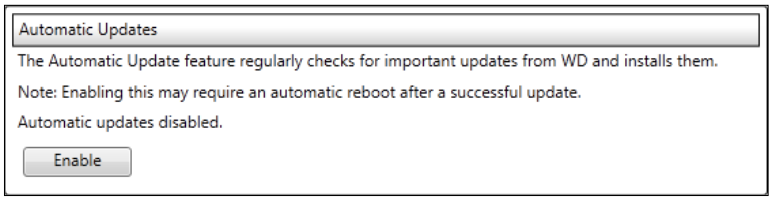
   c. Click **Open**. The system applies the software update. The system automatically restarts the server if a reboot is required to complete the software update.

## Automatic Updates of WD Software

Enabling **Automatic Updates** on your WD Sentinel server causes the server to check for available software updates from WD on a scheduled basis and apply the updates automatically.

### To set a schedule for automatic updates:

1. In the **Automatic Updates** section, click **Enable**.

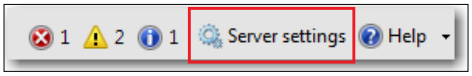

Automatic Updates
The Automatic Update feature regularly checks for important updates from WD and installs them.
Note: Enabling this may require an automatic reboot after a successful update.
Automatic updates disabled.
Enable

2. Click the **Change** link and select the day and time you want the WD Sentinel server to check for updates every week, and if an update is available, install it. (Example: every Sunday at 3:00 AM)
3. Click **Apply**.

## Updating Microsoft Software

You can update the Microsoft software for the WD Sentinel DX4000 using the Server Settings page. See “Managing Server Settings,” below.

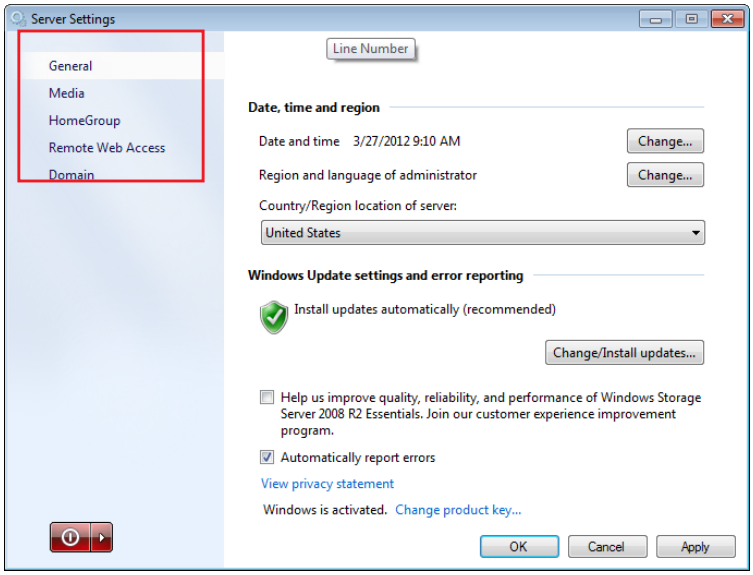
# Managing Server Settings




**Important:** Unless otherwise noted, *Microsoft Online Help* provides complete instructions for using these pages.

1. Click **Server Settings** on the icon bar to enable, set up, and control WD Sentinel server settings.

2. The General page displays. The left panel contains links to the rest of the Server Settings pages.




Following is a summary of the purpose of each of the Server Settings pages.

## General

- **Shutdown or restart the server**—This is the safest method to shut down or restart the server. It insures that the RAID system shuts down cleanly. See “” on page 27 for instructions.
- **Change the date, time, and location of the server**—You can change the settings you established at initialization.
- **Change the behavior of the Microsoft update**—You can change the settings for updating the Microsoft software.

## Customize Media Settings

Enable or disable media (DLNA) services, set the video streaming quality, and define the folders to be used for the media. By default, media service is enabled, and the default Picture, Music, and Video folders are set to distribute the media.

## Creating a HomeGroup

When creating a HomeGroup, establish which folders are to be shared through the HomeGroup. Note that HomeGroup is only available for Windows 7 clients.

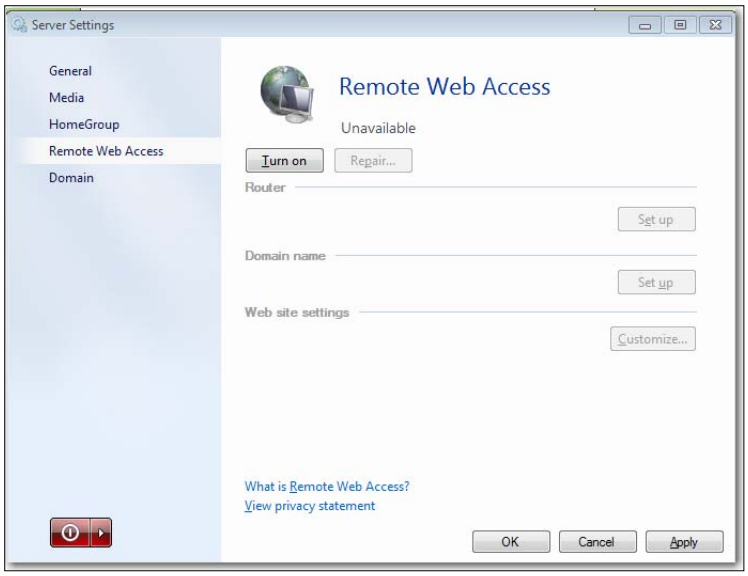
## Enable and Control Remote Web Access

With Remote Web Access enabled, you can access the WD Sentinel server from any device using a web browser, such as Internet Explorer, from anywhere with Internet access. You can access shared folders and files (that you have permission for) on the server as well as on your networked computer.

## Enabling Remote Web Access

Enable or disable Remote Web Access on the Server Settings page. Remote Web Access is turned off by default.

*Note:* The Home page provides a Getting Started task for enabling Remote Web Access by clicking link to the process.




1. Under **Server Settings**, click **Remote Web Access** in the panel on the left.
2. Click **Turn on** and complete the wizard to set up your router, set a domain name, and change Internet settings.
3. Grant Remote Web Access privileges if you want a user to access the WD Sentinel server, shared folders, computers, media, Home page links, and the Dashboard (administrators only) when you create or update a user account.

   To view a user's current privileges, click the **Users** icon in the Navigation bar.

   *Note:* The Guest account cannot have Remote Web Access.

   *Note:* Refer to *Microsoft Online Help* for detailed information about setting up remote web access and for troubleshooting connection issues.

## Join an Active Domain Server

This option is available for networks that have an Active Domain server for user control. A domain is a group of computers under the control of a server known as the domain controller. In the case of the Sentinel DX4000, it enhances security by allowing only users with necessary permissions to access the server. Refer to *Microsoft Online Help* for detailed information. For information on acceptable domains, go to *http://support.wdc.com* and search for Knowledge Base Answer ID 8549.

## Shutting Down the Server

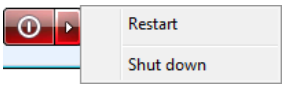
The WD Sentinel server is intended to be on at all times, providing shared data and backup services. A best practice is to avoid turning the unit off. However, if it does become necessary (for example, moving the server to a different location), then follow the procedures below.

It is very important that the WD Sentinel server be shut down or restarted in a clean and graceful manner. There are two ways to do this: through the **Server Settings** section in the Dashboard or through the power switch on the front panel of the server.

**WARNING! To avoid a potentially unclean shutdown that could corrupt the RAID configuration, shut down the server through the Dashboard rather than the front panel.**

### To shut down or restart using the Dashboard (Preferred method):

1. Click **Server Settings** in the icon bar.
2. To shut down, right-click the red button in the lower left corner of the page and select **Shut down**.




3. To restart, right-click the arrow and select **Restart.**
4. When the confirmation message appears, click **Yes**.

### To perform a clean shutdown using the front panel:

1. Press the power button for approximately ½ sec. (You may have to press it twice quickly.) The LCD displays “SHUTTING DOWN.”

   *Note:* In the event that the two methods above fail and you must force the unit off, hold down the power button for more than 3 seconds. The server powers off. When you turn it back on, the server executes a verification background task of the entire RAID system. This process may take a long time and degrade the performance.

5

# Managing Storage on the WD Sentinel Server

WD Sentinel Server RAID Storage
Using USB Storage
Replacing a Failed Drive
Adding Capacity by Adding a Drive

## WD Sentinel Server RAID Storage

RAID is the acronym for Redundant Array of Independent Disks. The WD Sentinel server provides automatic RAID service to assure the integrity of the storage system. For redundancy, a minimum of two drives must be active. The operating system and all data are protected by the RAID structure. The server automates the management of the RAID.

With two drives installed into the system, RAID 1 (mirror) is employed. With three or four drives installed, RAID 5 offers fast performance by striping data across all drives, These RAID levels provide the system with both redundancy and optimum capacity.

| | **2 TB Drives** | **3 TB Drives** |
|---|---|---|
| RAID Level 1 (2 Drives) | 2 TB Capacity | 3 TB Capacity |
| RAID Level 5 (3 Drives) | 4 TB Capacity | 6 TB Capacity |
| RAID Level 5 (4 Drives) | 6 TB Capacity | 9 TB Capacity |

If a drive in the array fails, the data and operating system are still intact, and the WD Sentinel server continues to provide service.

**Important:** If you have one bad drive, the server operates normally. However, if a second drive fails, the server will no longer operate. You will need to recover the server and/or replace the failed drive(a). A best practice is to have a replacement drive readily available.

The WD Sentinel server lets you know when a drive fails in the following ways:

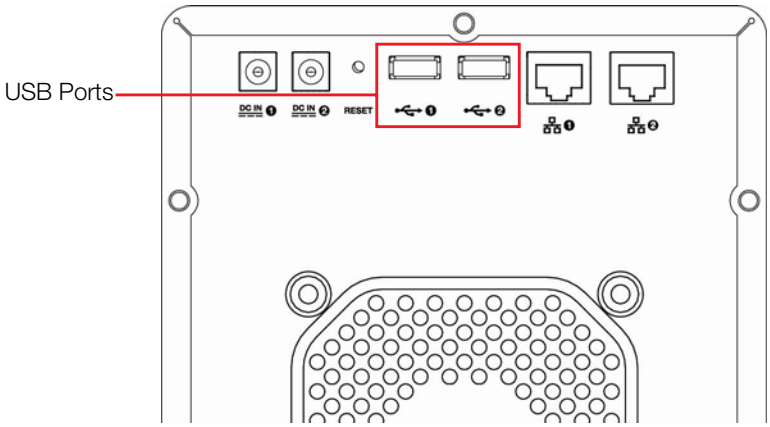
- The message "STORAGE DEGRADED" appears on the WD Sentinel server LCD.
- The LED above the bad drive is solid red.
- The Power LED on the WD Sentinel server flashes red, indicating a serious fault.
- An email Alert is posted if you have set it up to do so. (See “Monitoring System Health and Alerts” on page 21.)

To recover from a failed drive, simply replace the drive (the one with the red LED over the bay door) with an approved drive for the WD Sentinel server (see “Find compatible hard drives” on page 23). The WD Sentinel server validates the replaced drive and automatically integrates it into the RAID array. This operation takes many hours to accomplish. Progress of this operation appears on the display as well as on the Dashboard. It is not necessary to power off or disengage the WD Sentinel server to perform this operation. While the server is verifying the RAID array, your data continues to be available although the performance may be impacted.

The WD Sentinel server RAID system has no downgrade options. Once available capacity has been increased, the Administrator cannot decide to subsequently reduce capacity by removing a drive. The removal of a drive degrades the RAID and makes it vulnerable to single drive failure.

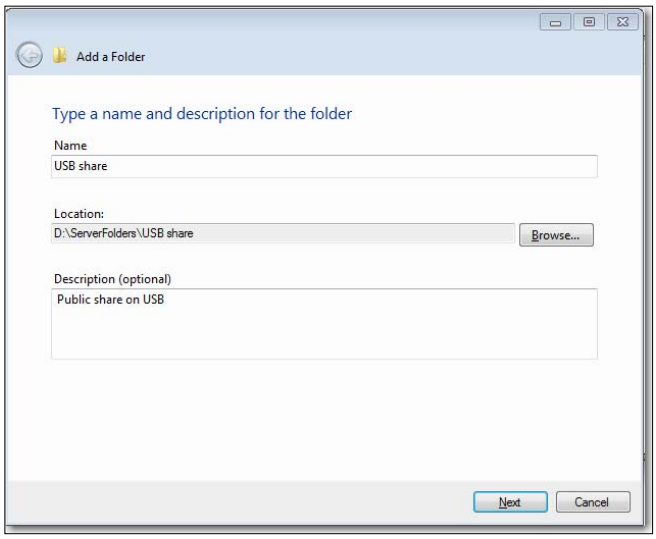
## Using USB Storage

On the back of the WD Sentinel server are two USB 3.0 ports that can connect to external USB 2.0 or USB 3.0 storage devices or to a UPS device for power outage conditions. For example, WD Passport or WD Essentials may be used to connect to the WD Sentinel server. You can share this data on your USB drive with other users connected to the server by using the Dashboard, which treats the USB drive as a share. You can set user privileges just as you do with shared folders on the WD Sentinel server's drives. The server manages UPS capability through a USB port for communication and to ensure an orderly shut down.



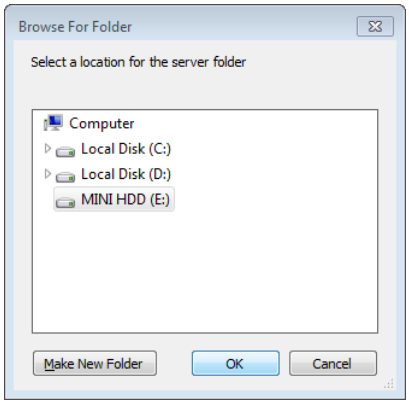

### To share data on a USB drive:

1. Connect a USB drive to either of the two USB ports.
2. On the Dashboard, click the **Servers Folders and Hard Drives** icon.
3. Click the **Server Folders** tab and then in the Task bar, click **Add a folder**.




4. Enter a name for the folder.

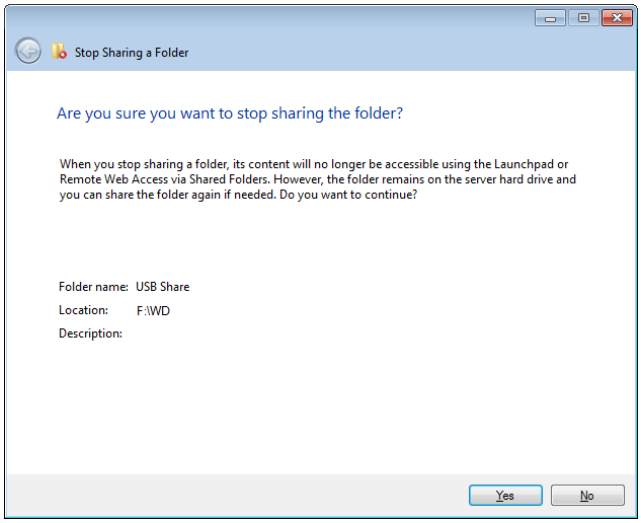
5. Click **Browse** and select a folder on the USB drive. Note that a shared folder cannot be created at the root of the USB drive.




6. Click **OK** and follow the instructions on the screen.

### To stop sharing data on a USB drive:

1. On the Dashboard, click the **Servers Folders and Hard Drives** icon.
2. Click the **Server Folders** tab, then select the folder you want to stop sharing.
3. On the Task bar, click **Stop sharing the folder**.


Stop Sharing a Folder
Are you sure you want to stop sharing the folder?
When you stop sharing a folder, its content will no longer be accessible using the Launchpad or Remote Web Access via Shared Folders. However, the folder remains on the server hard drive and you can share the folder again if needed. Do you want to continue?
Folder name: USB Share
Location: F:\WD
Description:
Yes
No

4. Click **Yes**, then click **Close**.

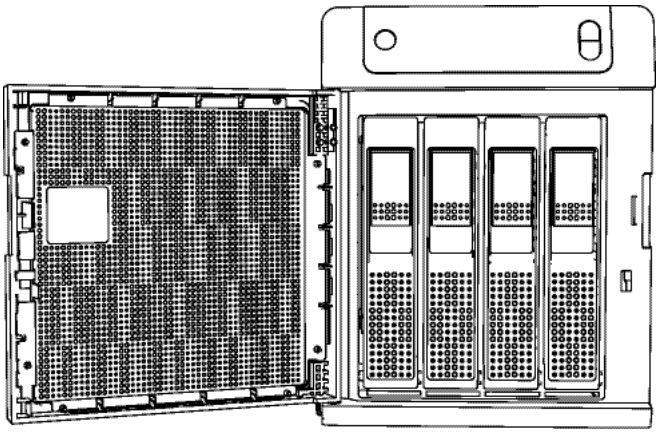
## Replacing a Failed Drive

It is simple to replace a failed drive in your WD Sentinel server. First, make sure to go to the WD Store to purchase a compatible replacement drive. For a complete list of approved drive models, search for Answer ID 9443 in the WD Knowledge Base at *http://support.wdc.com*.

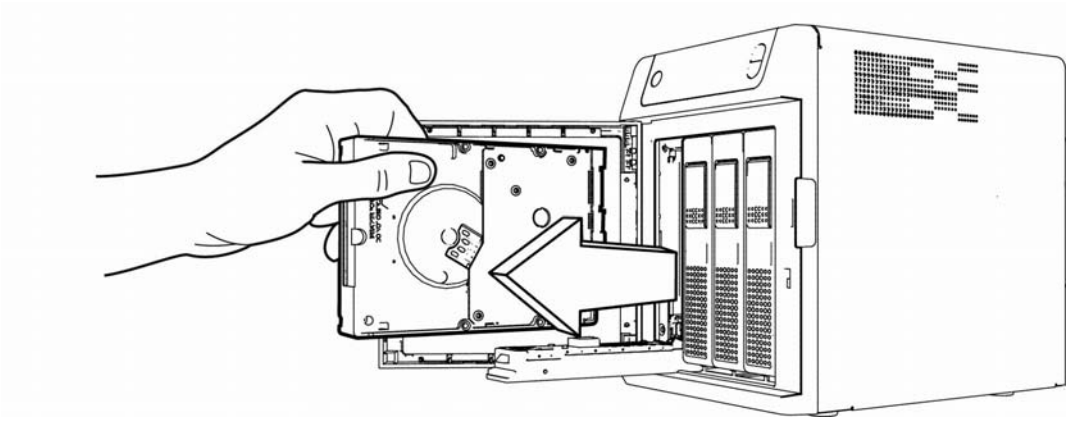
The drives in the WD Sentinel server are “hot swappable.” This means that the WD Sentinel server can remain powered on while you replace the drive. Once you replace the drive, the WD Sentinel server automatically reconfigures the RAID. (See “Find compatible hard drives” on page 23.)

Use the following steps to replace a failed drive in your WD Sentinel server.

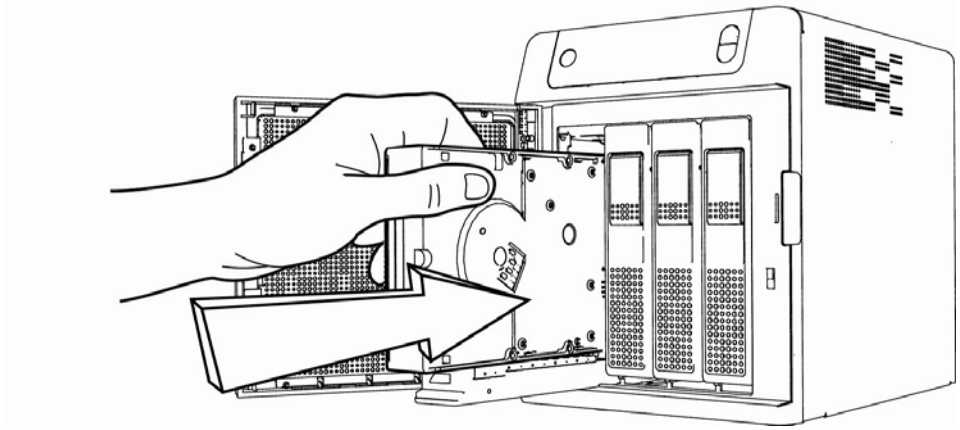
1. Verify that the LED for the bad drive is solid red.
2. Open the door on the front of the server.



3. Unlatch the handle on the front of the drive.
4. When it snaps open, pull out the drive.



5. Slide the replacement drive into the drive bay, making sure it is seated properly. and that it is facing the right way.
6. Using some force, snap the handle shut.



7. Close the door on the front of the server, making sure it snaps shut. The LED remains blank until the rebuild is complete. The rebuild percentage displays on the LCD.

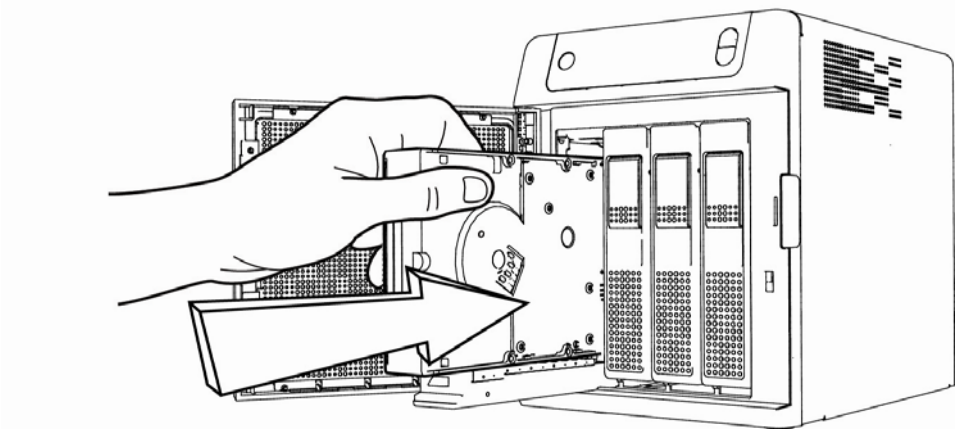
## Adding Capacity by Adding a Drive

To increase capacity, simply insert an additional drive into the system. The system does not have to be turned off or disengaged from its work to do this. The WD Sentinel server automatically recognizes the drive, checks to see if the drive is approved for use in the WD Sentinel server, and reconfigures the RAID to accept the new drive. At the completion of this reconfiguration, the additional capacity is automatically available to the system. No further operation is required.

*Note:* The additional drive must have a minimum available capacity of the smallest drive in the array. For example, a 3 TB drive may be added to an array made up of 2 TB drives, but a 2 TB drive may not be added to an array composed of 3 TB drives.

Use the following steps to add a drive to your WD Sentinel server.

1. Open the door on the front of the server.
2. Unlock the handle on the empty drive bay and insert the drive into the bay, making sure it is facing the right way and is seated properly.
3. Using some force, snap the handle shut.



4. Close the door.

6

# Using the WD Sentinel Server's Features

Using the Launchpad (Internal Users)
Accessing Shared Folders Over Your Network
Accessing Computers and Shared Folders Remotely
Backing up (Windows PC)
Recovering/Restoring (Windows PC)
Recovering/Restoring (Windows PC)
Recovering the WD Sentinel Server

This chapter describes the routine tasks that both the Administrator and permitted users perform on the WD Sentinel server.

## Using the Launchpad (Internal Users)

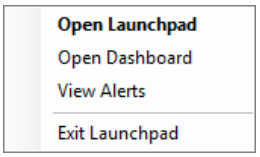
After you, the Administrator, use the Dashboard on a Windows PC to set up users with a user name, password, and permissions, they can access the Launchpad Sign-in page using one of the following methods:

| | |
|---|---|
| **Best Practice:** | Ideally, you have set up a user name and password for yourself and given it all access privileges so you too can use the Launchpad shortcuts. |

### Accessing the Launchpad

#### To access the Launchpad (Windows PC):

1. Do one of the following:
   - Click **Start** or **>(All) Program(s) >Windows Storage Server 2008 R2>Windows Storage Server 2008 R2 Dashboard**.
   - Right-click the Launchpad icon in your system tray and select **Open Launchpad,** or double-click the **Launchpad** icon.




2. Enter your user name and password.

3. Click the **right arrow** to display the Launchpad, which lists four tasks that authorized users can perform: **Backup, Remote Web Access**, **Shared Folders** and **Dashboard**.

   *Note:* The **Dashboard** option is only useful to a user with Administrative privileges and knowledge of the Administrator password.

### To access the Launchpad (Mac Computer):

1. Do one of the following:
   - Click **Finder>Applications>Launchpad**
   - Click the **Launchpad** icon in the dock.

   The Sign in page displays.

2. Enter your User Name and Password

3. Click the **right arrow** to display the Launchpad, which lists three tasks that authorized users can perform: **Backup, Remote Web Access,** and **Shared Folders**.

   *Note:* On a Mac computer, the Dashboard is not available.

## Selecting Launchpad Options (Windows PC or Mac Computer)

### To select Launchpad options:

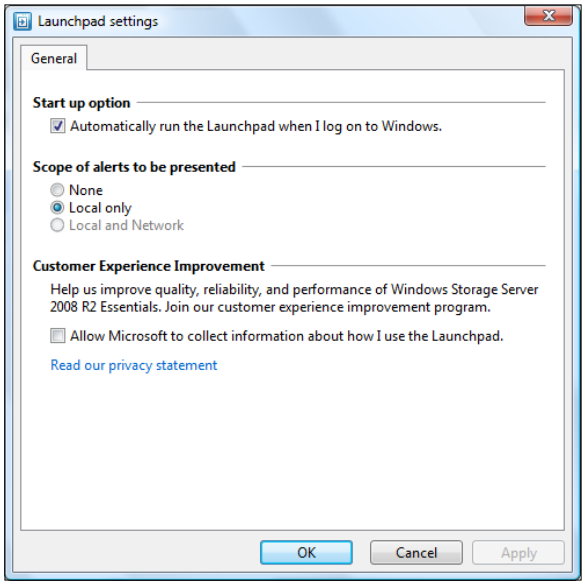
| IF you want to . . . | THEN . . . | AND ... |
|---|---|---|
| Back up your Windows PC to the WD Sentinel server manually | Click **Backup** | Continue to "Backing up (Windows PC)" on page 40 or "Recovering/ Restoring (Windows PC)" on page 43. |
| Use Remote Web Access:<br>• Enable remote web access for users with Remote Access Privileges.<br>• Access the server from a remote location (all users)<br>• Change a user password (by the user) | Click **Remote Web Access** | Continue to "Enable and Control Remote Web Access" on page 26 and "Accessing Computers and Shared Folders Remotely" on page 38. |
| Access shared folders on the server | Click **Shared Folders** | Continue to "Accessing Shared Folders Over Your Network" on page 38. |
| Manage the server (Windows PCs and Administrators only) | Click **Dashboard** | Enter the Administrator password and continue to "Managing the WD Sentinel Server (Dashboard)" on page 17. |

## Managing the Launchpad

### To disable the Launchpad after signing in (Windows PC):

1. Sign in to the Launchpad.
2. Click the menu **arrow** at the top right and select **Settings** from the drop-down menu.

3. Clear the **Automatically run the Launchpad when I log on to Windows** check box, and click **OK**.


Launchpad settings
General
Start up option
Automatically run the Launchpad when I log on to Windows.
Scope of alerts to be presented
None
Local only
Local and Network
Customer Experience Improvement
Help us improve quality, reliability, and performance of Windows Storage Server 2008 R2 Essentials. Join our customer experience improvement program.
Allow Microsoft to collect information about how I use the Launchpad.
Read our privacy statement
OK
Cancel
Apply

*Note:* You can also change the type of alerts that display on the Launchpad and select whether to allow Microsoft to send you information about it in this window.

### To uninstall the Launchpad (Connector Software) on a Windows PC:

*Note:* When you uninstall Launchpad, you also uninstall Dashboard. They can not be uninstalled separately.

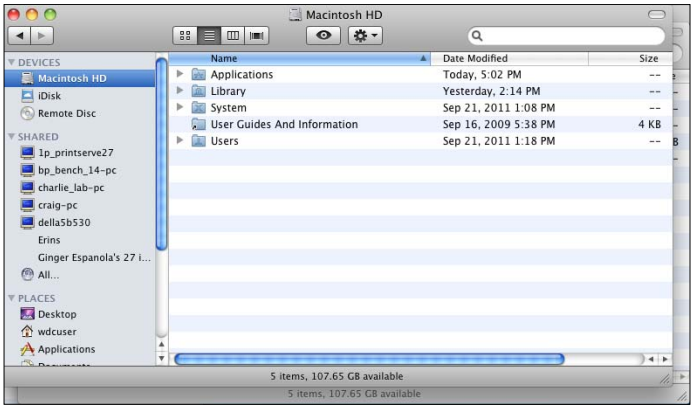
1. Click **Start**, click **Control Panel**, and in the Programs section, click **Uninstall a Program**.
2. From the list, select **Windows Storage Server 2008 R2 Connector**.
3. Click **Uninstall**.
   - If the User Account Control window displays, click **Allow**.
   - If the Windows Storage Server 2008 R2 Essentials Connector page displays suggesting that you close the Launchpad, click **OK**.

     *Note:* You must reboot the computer before installing another Connector.

### To uninstall the Launchpad (Connector Software) on a Mac:

You must uninstall Launchpad from three Macintosh HD folders: Users, Applications, and Library.

1. Close the Launchpad.
2. Click **Go>Computer>Macintosh HD**.

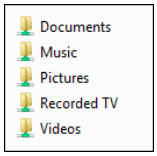



3. Click **Users>**your user name for this computer**>Library>Application Support>Microsoft**. Drag and drop **Launchpad** into the **Trash** icon.
4. Return to Macintosh HD and click **Applications**. Drag and drop **Launchpad** into the **Trash** icon.
5. Return to Macintosh HD and click **Library>Applications**. Drag and drop Launchpad into the **Trash icon**. The Launchpad icon no longer appears in the dock.

## Accessing Shared Folders Over Your Network

### Launchpad

1. On the Launchpad, click **Shared Folders**. A set of folders similar to the one below displays:




2. Double-click a folder to open it, then click the file you want to access. Your access (as a general user) depends on the permissions assigned to you by the Administrator.

## Accessing Computers and Shared Folders Remotely

This section assumes that the Administrator has completed the setup and configuration for Remote Web Access through the Dashboard.

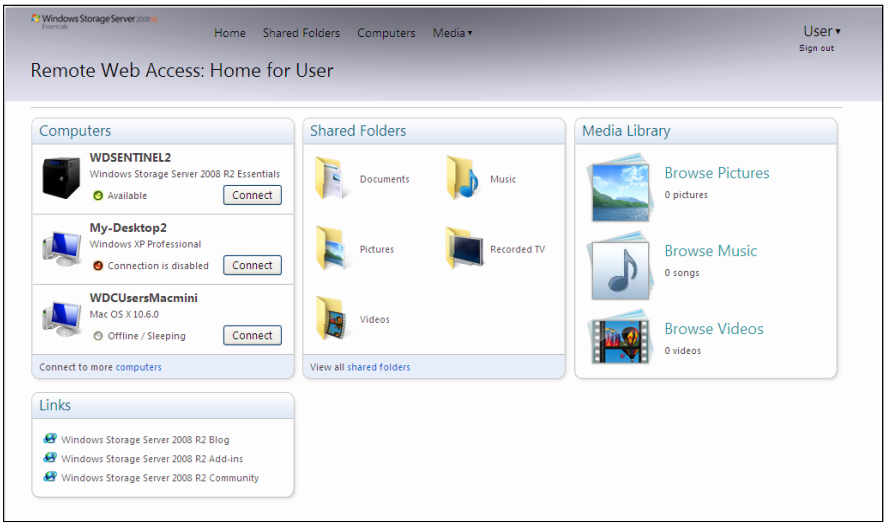
You can access files stored on the WD Sentinel DX4000 anywhere, as long as you have access to the Internet.

*Note:* You must use Internet Explorer 8 or 9 to access a PC using the Remote Web Access feature. See "Specific Problems and Corrective Actions" on page 55.

## Logging In

1. On the Launchpad, click **Remote Web Access** or on a web browser, enter the domain address for your WD Sentinel server. This is the domain address the Administrator configured while setting up Remote Web Access on your WD Sentinel server. The following web page displays in your browser.

2. Enter your WD Sentinel server user name and password, then click the **arrow** to display the Remote Web Access: Home for User window:




## Remote Web Access Home Page

The Remote window includes the following sections:

*Note:* You can also use the navigation links at the top of the window to view these sections.

## Computers

*Note:* Connecting to computers or the WD Sentinel server using Remote Web Access requires the Internet Explorer browser.

- Click **Connect** to connect to your WD Sentinel server or to a computer on your network.
  - If the Internet Explorer you are using does not have Active X Client, click **OK** to install it, then complete the wizard.

### Shared Folders

Access shared folders on the WD Sentinel server. The folders may include Documents, Pictures, Music, Video, Recorded TV, and any additional shared folders the Administrator may create using the Dashboard. A user with "Read & Write" access to a particular shared folder is able to modify the contents of the existing files, upload new files, or delete files from the folder.

*Note:* Only the folders for which the user has permissions are displayed under Shared Folders on Remote Web Access.

### Media Library

Browse through your pictures, music, videos, and recorded videos. The WD Sentinel server automatically discovers the media files and adds them to your media library. The built-in media capabilities allow you to view your pictures in a slideshow, steam digital music, or stream videos over the web.

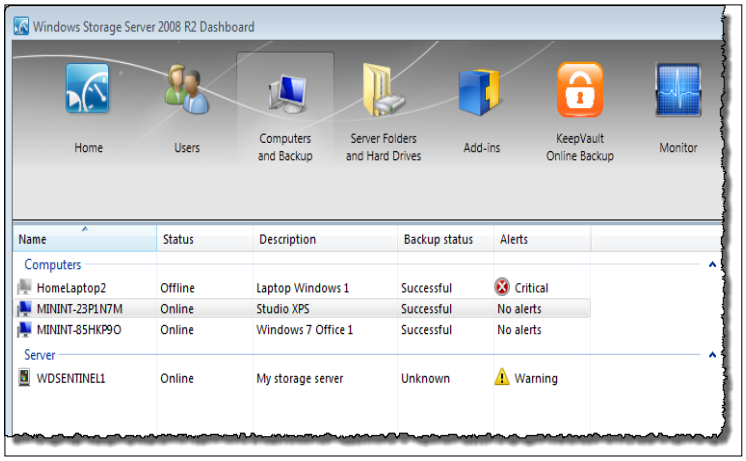
## Backing up (Windows PC)

The WD Sentinel server backup is based upon block level de-duplication, a process that backs up data without unnecessarily backing up the same data more than once. This powerful process uses less network traffic for execution, provides a full back-up at each backup time (although it behaves as if it is incremental), and by executing de-duplication across all client computers, the storage capacity requirements are significantly reduced. Backup becomes an automatic process for a computer once you install Connector software on it. With Connector software installed, all volumes and all NTFS data on that computer are backed up.

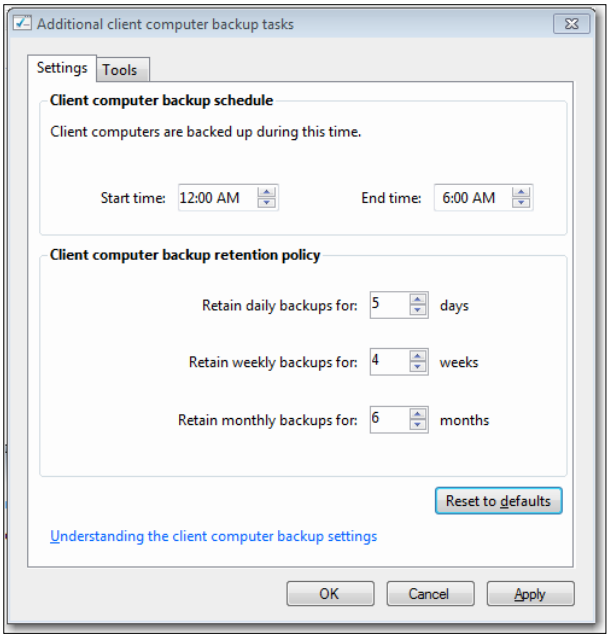
### Scheduling Automatic Backups (Dashboard only)

To set a schedule for future backups:

1. Access the Dashboard.
2. Click the **Computers and Backups** icon on the navigation bar to display a list of computers and servers on your network:



3. Click **Additional client computer backup tasks** in the task panel.




4. Enter the **Start time** and **End time** for daily backups and click **OK**.

## Initiating Backups

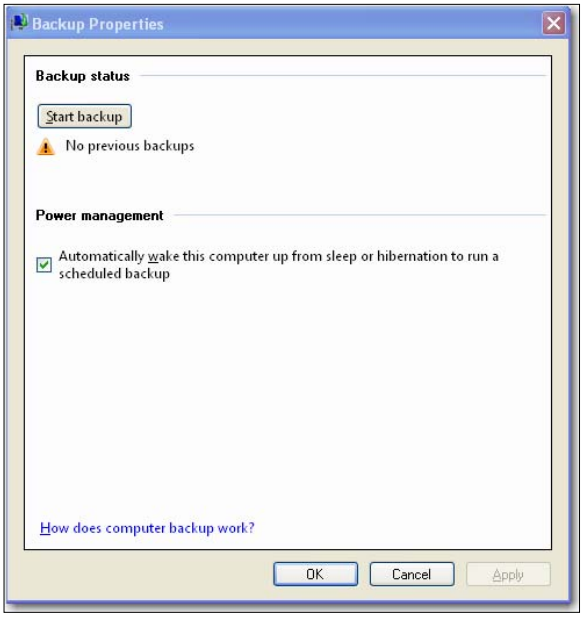
By default, backups are performed at night for up to 25 client computers in a sequential order. If the client computer is asleep or hibernating at that time, the backup software can be enabled to wake up the client computer, back it up, and put it back to sleep.

You may start a backup either through the **Launchpad** on the computer being backed up or through the Dashboard.

### Backup Using the Launchpad

*Note:* For information on accessing the Launchpad, see "Using the Launchpad (Internal Users)" on page 34).

1. On the Launchpad, click **Backup**. The Backup Properties page displays:




2. Click **Start backup**.
3. Enter a name for the backup and click **OK**:

The Backup Properties page re-displays and tracks the progress of the backup.

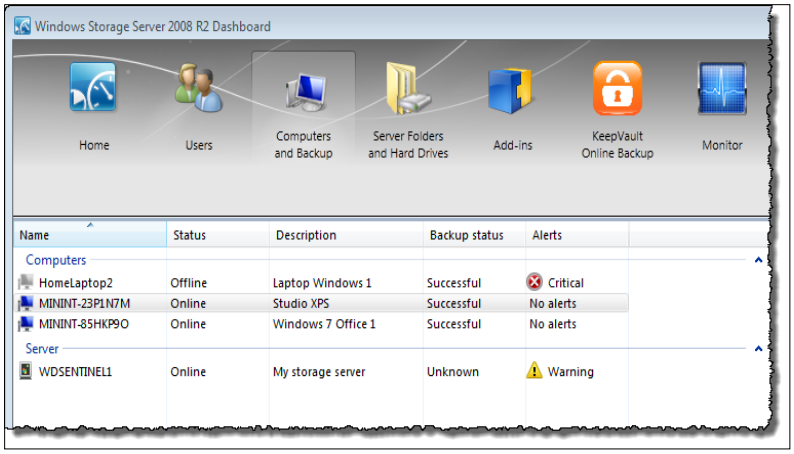
*Note:* If you want the computer to automatically wake up for scheduled backups, select the check box.

4. Click **OK** to apply the change, close the page, and return to the Launchpad while the backup continues.

The message that the backup was successful displays on the page and on the Dashboard. For more information about the backup process, see *Microsoft Online Help*.

### Backup Using the Dashboard

1. Click the **Computers and Backups** icon on the navigation bar to display a list of computers and servers on your network:




2. Select the computer you want to back up.
3. Click **Start a Backup for the Computer** in the Task pane. For further instructions, see *Microsoft Online Help*.

## Recovering/Restoring (Windows PC)

The WD Sentinel server provides two options for recovering lost or corrupted data:

- **Restore a Computer**—Restores all the data and settings of a Windows PC computer or a storage device connected to the WD Sentinel server.
- **Recover File/Folders** —Recovers individual files or folders.

### Restoring Windows PC Computers (Bare Metal Restore)

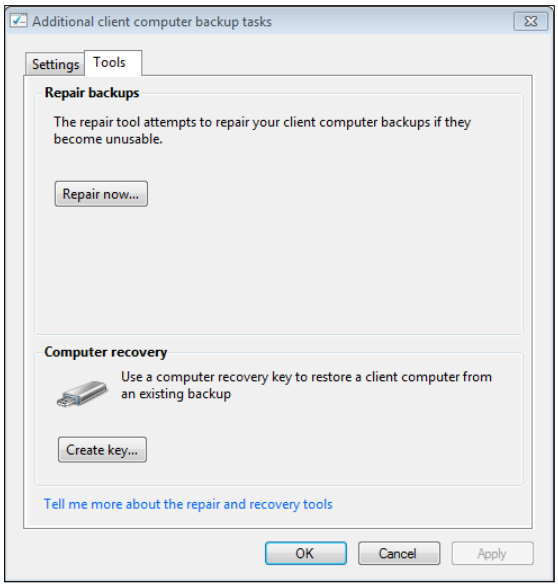
This feature restores a Windows PC connected to your WD Sentinel server. Should your computer experience an unfavorable event such as a hard drive crash, the Recovery feature reinstalls the operating system, software applications, and all the data. This type of recovery is known as a bare-metal restore; it recovers everything that was on the computer when it was backed up.

**Best Practice:** You may need some network drivers. Save them to a USB flash drive.

#### To restore a Windows PC that has been backed up:

1. Click **Computers and Backups** on the navigation bar.
2. Select the computer that was backed up.
3. Insert a USB flash device into one of the WD Sentinel server's USB ports.

4. In the panel on the right, click **Additional Client Computer Backup Tasks** and then **Tools**:

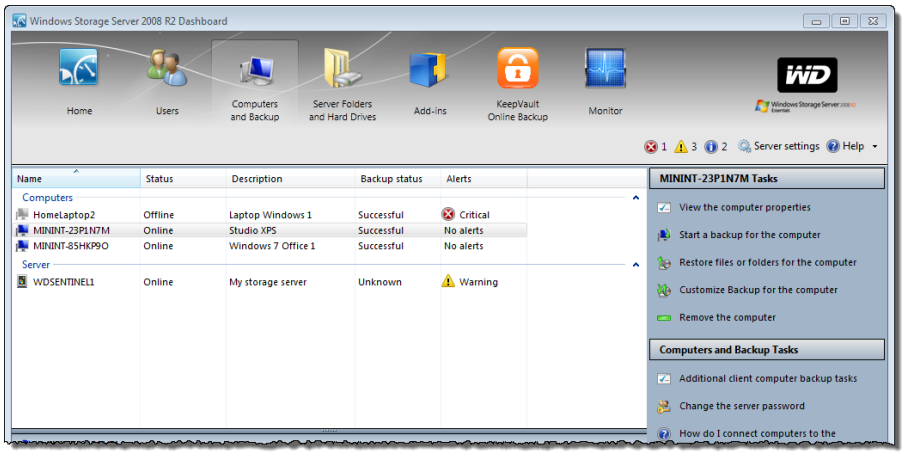

Additional client computer backup tasks
Settings
Tools
Repair backups
The repair tool attempts to repair your client computer backups if they become unusable.
Repair now...
Computer recovery
Use a computer recovery key to restore a client computer from an existing backup
Create key...
Tell me more about the repair and recovery tools
OK
Cancel
Apply

5. Click **Create Key** to generate a bootable USB flash key (configuration file) on the connected USB flash drive. You will use the key to boot the PC and download the backed-up system. Follow the wizard to complete the process.
6. Remove the USB flash drive from the WD Sentinel server and connect it to the computer you want to restore.
7. Boot the Windows PC from the USB flash drive:
   a. Start the computer.
   b. Depending on your computer, press **F12** or another key that displays boot options.
   c. From the Boot menu, select **USB Device**.
   d. On the Windows Boot Manager, select a Windows operating system for a full-system restore. The Full System Restore wizard Welcome screen displays.
      - If a message indicates that you do not have the correct network card driver, insert the USB flash drive with the driver into another USB port on the Windows PC, and follow the steps in the wizard to restore the computer.
      - If you do have the correct driver, click **Continue** and complete the steps in the wizard to restore the computer.

      *Note:* Refer to *Microsoft Online Help* for additional information.

### To recover individual files and folders:

1. Click the **Computers and Backups** icon and select the computer from which you would like to recover the backup files.




2. In the Task panel, click **Restore Files or Folders for the Computer**. The server displays a list of your backups.
3. Select the backup that has the files and folders you want to restore and click **Next**.
4. Follow the wizard to select the files and folders and recover them to your computer. See *Microsoft Online Help* for additional information.

## Recovering the WD Sentinel Server

This feature recovers your WD Sentinel server, a process that may be necessary in case the server has a virus that cannot be deleted, bad or corrupted server configuration settings prevent you from starting the server, or the system drive(s) failed.

**Best Practice:** You may lose some of your data, depending on the type of recovery you perform.

### Requirements

- Dual Layer DVD, 8.5 GB or larger
- USB flash drive, 8.5 GB or larger
- Windows PC
- DVD burner or DVD emulation software

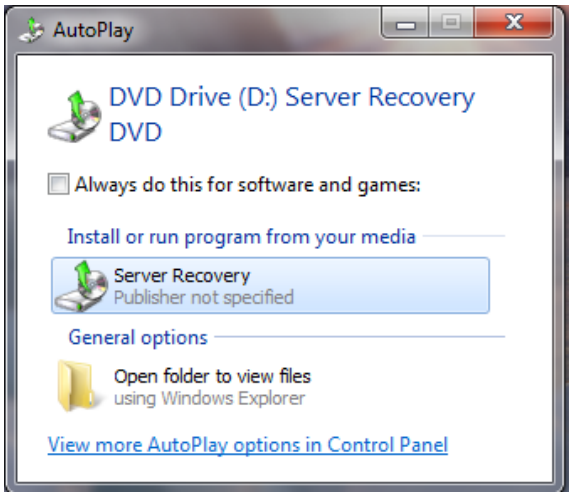
*Note:* Free DVD emulation software is available on the Internet. For more information on emulation software, see Knowledge Base Answer ID 8561.

### Create the DVD

1. Download the *Server Recovery ISO* file and save it to a preferred location on your computer.
2. Obtain a Dual Layer (DL) DVD that has at least 8.5 GB capacity and place it in a DVD Burner on the Windows PC where the Server Recovery ISO file is located. Burn the Server Recovery ISO to the DVD. (Alternatively, create a virtual DVD.)

## Run the DVD

1. Run the DVD on Windows Vista/Windows 7 by clicking **Server Recovery** on the window that displays:


AutoPlay
DVD Drive (D:) Server Recovery DVD
Always do this for software and games:
Install or run program from your media
Server Recovery
Publisher not specified
General options
Open folder to view files
using Windows Explorer
View more AutoPlay options in Control Panel

   or on a Windows XP, by clicking **Setup.exe** under **My Computer**.

2. After the application runs, a Server Recovery Utility window appears with three options:
   - Unlock my drives
   - Recreate my storage
   - Perform a recovery

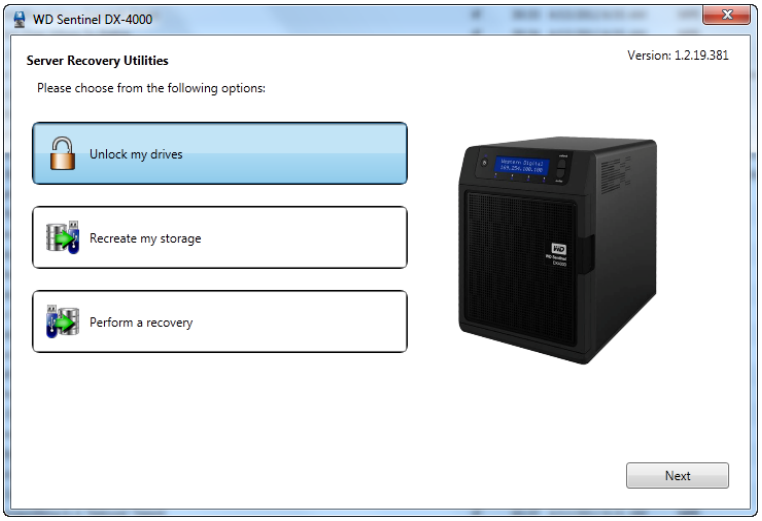
These options are explained below.

## Unlock my drives

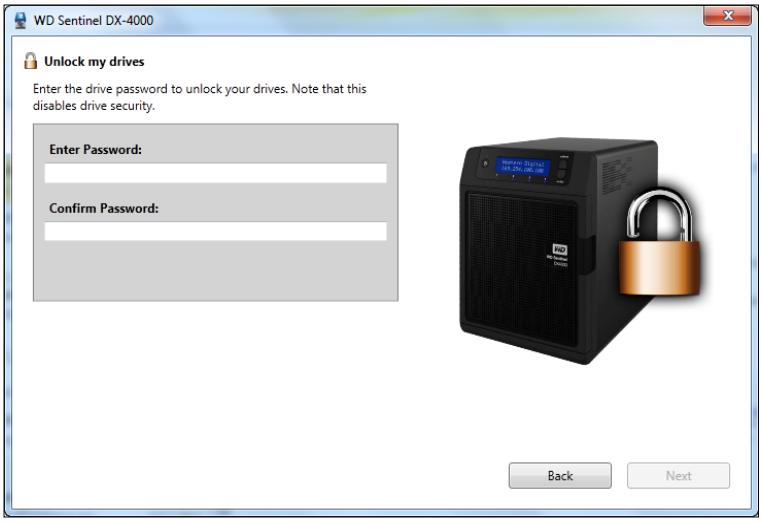
Unlock my drives unlocks the WD Sentinel server's drives if they are locked. (See "Lock/Unlock" on page 23.) Before starting any recovery process, unlock the drives with an unlock key.

To create an unlock key:

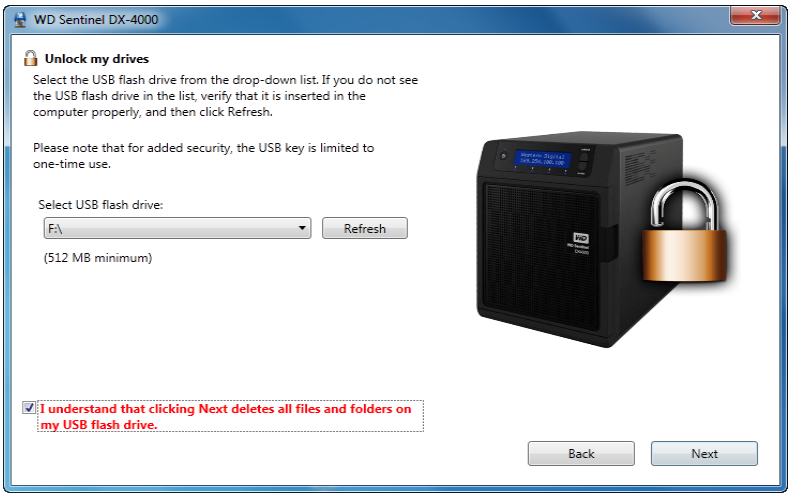
1. On the Server Recovery Utilities window, click **Unlock my drives**.



2. Click **Next** and enter the password previously set to lock the drives. Keep in mind that this password is not the WD Sentinel server's Administrator password. It is the locked drives password (see "Lock/Unlock" on page 23). If the Administrator password was used to lock the drives, enter it here.

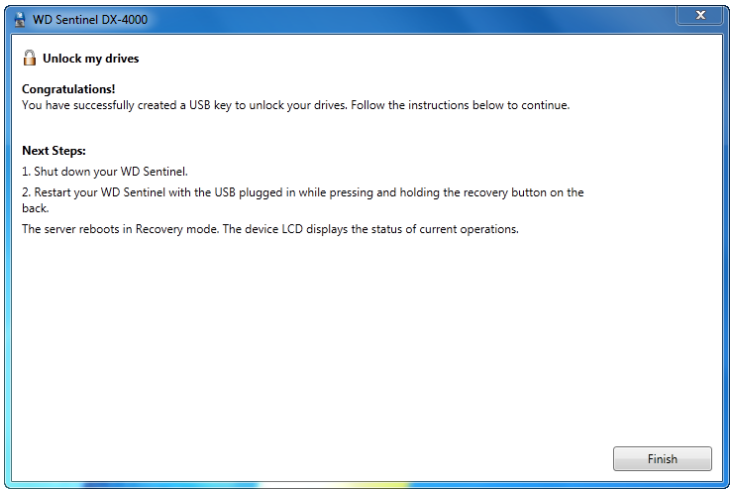



3. Insert the USB flash drive into the Windows PC USB port. The USB flash drive should appear in the **Select USB flash drive** drop-down list.


WD Sentinel DX-4000
Unlock my drives
Select the USB flash drive from the drop-down list. If you do not see the USB flash drive in the list, verify that it is inserted in the computer properly, and then click Refresh.
Please note that for added security, the USB key is limited to one-time use.
Select USB flash drive:
F:\
Refresh
(512 MB minimum)
I understand that clicking Next deletes all files and folders on my USB flash drive.
Back
Next

4. If the USB flash drive is not on the list, click **Refresh** and search for it.
5. After locating the USB flash drive, click the **"I understand..."** check box to indicate that you know the process will delete all files and folders on your USB flash drive.

6. Click **Next** to display the "Congratulations and Next Steps" page.

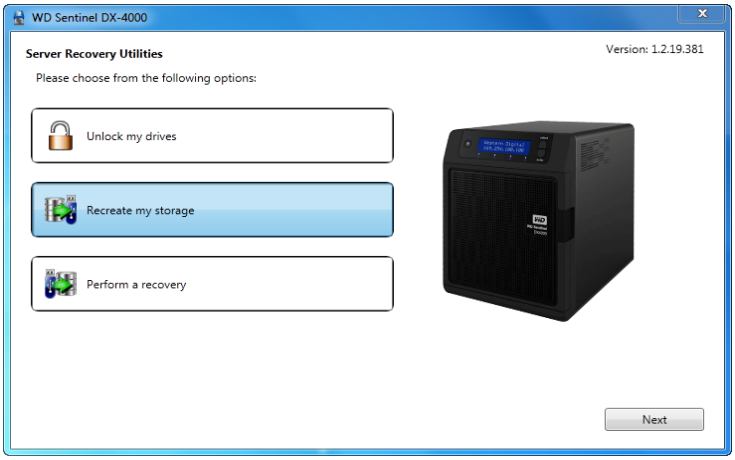

WD Sentinel DX-4000
Unlock my drives
Congratulations!
You have successfully created a USB key to unlock your drives. Follow the instructions below to continue.
Next Steps:
1. Shut down your WD Sentinel.
2. Restart your WD Sentinel with the USB plugged in while pressing and holding the recovery button on the back.
The server reboots in Recovery mode. The device LCD displays the status of current operations.
Finish

7. Follow the steps listed on this page:
   a. Shut down the WD Sentinel server.
   b. Insert the USB flash drive into one of the server's USB ports.
   c. Restart your server while pressing and holding the **Recovery** button on the back of the server.
   d. Continue to hold the **Recovery** button until the LCD displays "INITIALIZING OK. LOADING RECOVERY." Release the **Recovery** button.
   e. Allow the recovery process to complete. When it is done, the LCD displays "UNLOCK DRIVES SUCCESS."

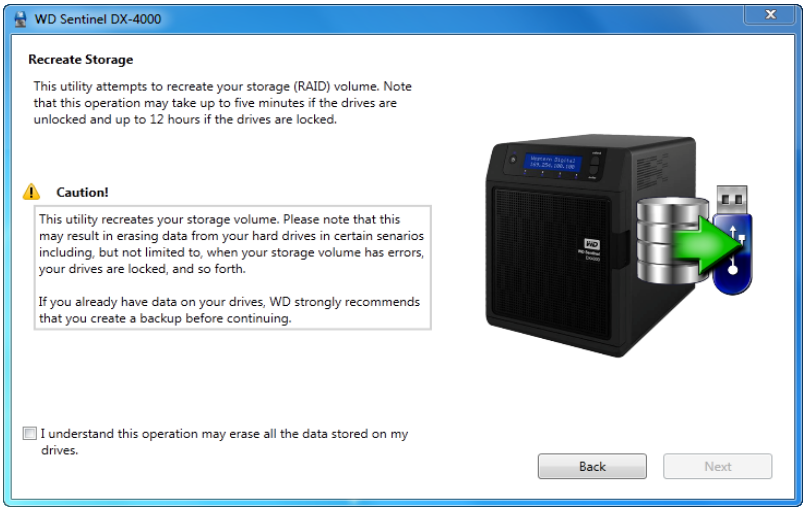
## Recreating the storage

With this option, you can restore the WD Sentinel server's operating system without deleting any data files.

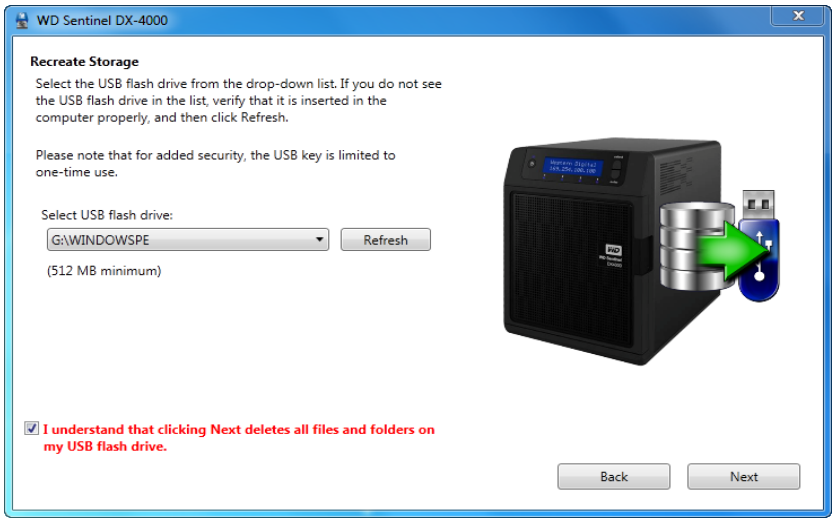
1. On the Server Recovery Utilities page, click **Recreate my storage**.



2. Click **Next**. The Recreate Storage page displays:

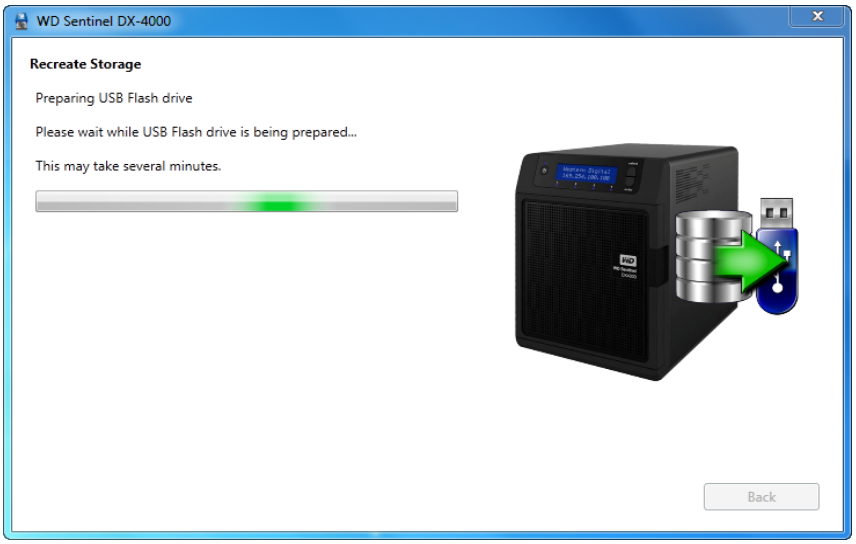

WD Sentinel DX-4000
Recreate Storage
This utility attempts to recreate your storage (RAID) volume. Note that this operation may take up to five minutes if the drives are unlocked and up to 12 hours if the drives are locked.
Caution!
This utility recreates your storage volume. Please note that this may result in erasing data from your hard drives in certain senarios including, but not limited to, when your storage volume has errors, your drives are locked, and so forth.
If you already have data on your drives, WD strongly recommends that you create a backup before continuing.
I understand this operation may erase all the data stored on my drives.
Back
Next

3. Read the caution and click the check box to indicate you know the process may erase the data on the WD Sentinel server's drives while it recreates the server's configuration.
4. Insert the USB flash drive into the USB port of the Windows PC, and click **Next** to display the following page for using the USB key:

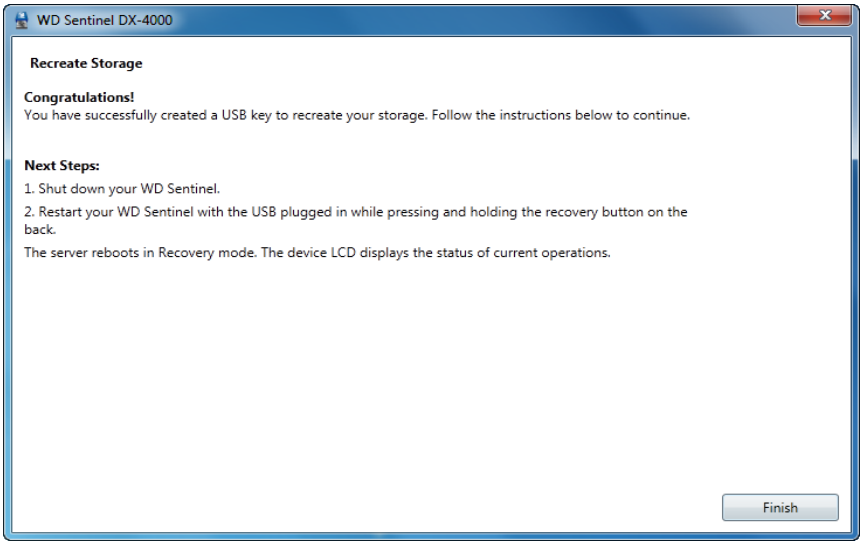

WD Sentinel DX-4000
Recreate Storage
Select the USB flash drive from the drop-down list. If you do not see the USB flash drive in the list, verify that it is inserted in the computer properly, and then click Refresh.
Please note that for added security, the USB key is limited to one-time use.
Select USB flash drive:
G:\WINDOWSPE
Refresh
(512 MB minimum)
I understand that clicking Next deletes all files and folders on my USB flash drive.
Back
Next

5. The USB flash drive should appear in the **Select USB flash drive** drop-down list. If the USB flash drive is not on the list, click **Refresh** and search for it.
6. After locating the USB flash drive, click the check box acknowledging that you know that when you click **Next**, all files and folders on the USB flash drive will be deleted.

7. Click **Next**. A progress bar displays while the USB flash drive is being prepared.


WD Sentinel DX-4000
Recreate Storage
Preparing USB Flash drive
Please wait while USB Flash drive is being prepared...
This may take several minutes.
Back

8. Upon completion of the process, the Recreate Storage page displays:

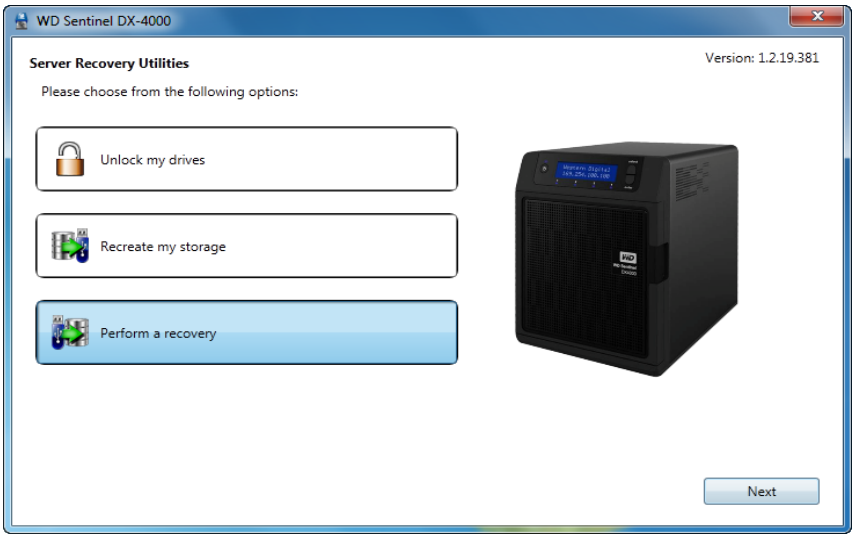

WD Sentinel DX-4000
Recreate Storage
Congratulations!
You have successfully created a USB key to recreate your storage. Follow the instructions below to continue.
Next Steps:
1. Shut down your WD Sentinel.
2. Restart your WD Sentinel with the USB plugged in while pressing and holding the recovery button on the back.
The server reboots in Recovery mode. The device LCD displays the status of current operations.
Finish

9. Follow the instructions under **Next Steps**:
   a. Shut down the WD Sentinel server.
   b. Insert the USB flash drive into one of the server's USB ports.
   c. Restart your server while pressing and holding the **Recovery** button on the back of the server.
   d. Continue to hold the **Recovery** button until the LCD displays "INITIALIZING OK. LOADING RECOVERY." Release the **Recovery** button.
   e. Allow the recovery process to complete. When it is done, the LCD displays "STORAGE OK."
10. When the process is done, the server's LCD displays "STORAGE OK." Click **Finish**.

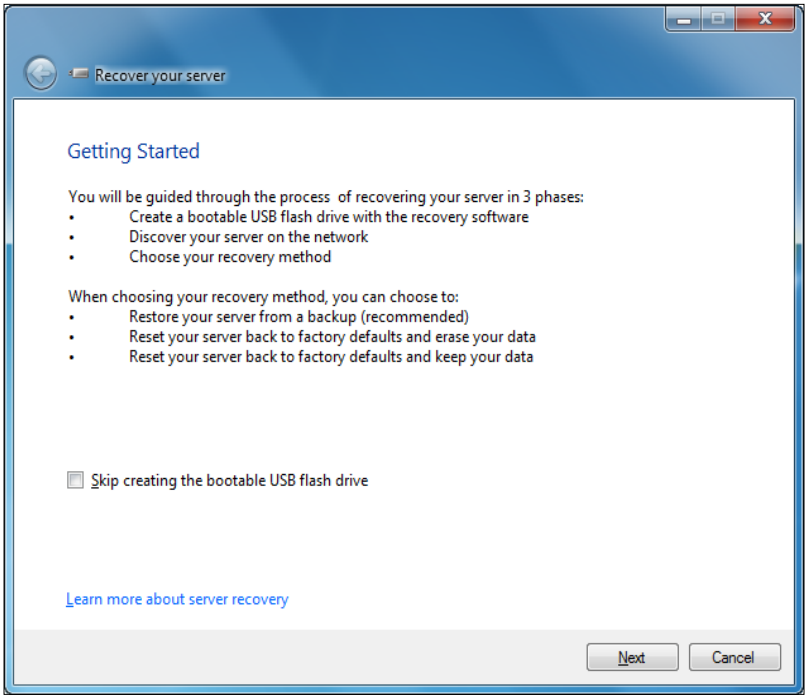
## Performing a Recovery

This option enables the Administrator to restore the server to factory defaults with or without deleting all contents stored on the WD Sentinel server.

1. On the Server Recovery Utilities window, click **Perform a recovery**:




2. Click **Next.** The Getting Started page displays:


Recover your server
Getting Started
You will be guided through the process of recovering your server in 3 phases:
Create a bootable USB flash drive with the recovery software
Discover your server on the network
Choose your recovery method
When choosing your recovery method, you can choose to:
Restore your server from a backup (recommended)
Reset your server back to factory defaults and erase your data
Reset your server back to factory defaults and keep your data
Skip creating the bootable USB flash drive
Learn more about server recovery
Next
Cancel

3. Click the **Skip creating the bootable USB flash drive** check box (avoids duplicating a procedure later on) and click **Next**.
4. Insert the USB flash drive into the USB port of the Windows PC, and click **Next** to display a page for using the USB key.
5. The USB flash drive should appear in the Select USB flash drive drop-down list. If it is not on the list, click **Refresh** and search for it.

6. After locating the USB drive, click the check box to acknowledge that you know clicking **Next** will delete all files and folders on the USB flash drive.
7. The recovery application on the DVD prepares the USB drive. This process can take up to 15 minutes to complete. After the USB drive preparation is done, additional instructions appear to guide you through the recovery process:
   a. Shut down the WD Sentinel server.
   b. Insert the USB flash drive into one of the server's USB ports.
   c. Restart your server while pressing and holding the **Recovery** button on the back of the server.
   d. Continue to hold the **Recovery** button until the LCD displays "INITIALIZING OK. LOADING RECOVERY." Release the **Recovery** button.
   e. Wait until the LCD displays "RECOVERY STARTED."
8. Return to the PC and follow the instructions by clicking **Next**. Make sure the PC is on the same network as the WD Sentinel server. The application searches for the WD Sentinel server and performs the final recovery. When the recovery is done, the default display (WDSentinel and IP address) appears on the LCD. For more information, see *Microsoft Online Help*.

7

# Best Practices

Setting up the WD Sentinel DX4000
Setting up Client Computers
Using the WD Sentinel DX4000 Efficiently
Replacing Drives
Shutting Down

The following practices help you use the WD Sentinel DX4000 and protect your data efficiently and safely.

## Setting up the WD Sentinel DX4000

- Change the default name of WD Sentinel to something unique. This avoids conflicts when another WD Sentinel server is added to your network in the future.
- Make sure Ethernet 1 and Ethernet 2 are on the same network subnet.
- Add the server to your domain. This allows users to use the same login and password for both the Launchpad and their computer.
- If you decide to lock the drives, make sure the password is stored in a safe place.
- Set user password policy to at least medium security.
- Enable Microsoft Automatic Updates to find and apply the latest Microsoft software update.
- Enable WD Automatic Updates to find and apply the latest WD software update.
- Set up Automatic Alert Notification for real-time notifications of any problems with the WD Sentinel server.
- Set up Remote Web Access using Ports 443 and Port 80. If your router or IP provider blocks these ports, you may need to consult with your IP provider for assistance.
- **Do not remove the Windows page file!** Some critical functions use the system's paging file. Removing the page file can potentially leave your system unusable with the possibility of data loss. To maintain the reliability of your system and its redundant resources, do not modify the paging file whatsoever.

## Setting up Client Computers

- Before loading the Connector software to add a computer to the WD Sentinel server for backup, be sure that the computer's operating system is fully up-to-date.
- When adding client computers to the WD Sentinel server, it is best not to have any backups active.

## Using the WD Sentinel DX4000 Efficiently

- The WD Sentinel server has many jobs to perform. Share data during business hours, and back up the computers during hours of inactivity. Keep the server powered on 24/7 to do its work.

## Replacing Drives

- The online removal of a drive forces a rebuild when the drive is replaced. Until the rebuild is complete, the RAID system is degraded and unrecoverable failure will occur should another drive be removed. Only remove one drive at a time between rebuilds.
- Avoid pulling a drive out unless there is a failure.
- When a drive needs replacement, the WD Sentinel server is still functional but subject to a second drive failure that would result in the loss of data. To minimize this vulnerable time, a good practice is to have another drive ready to replace the failed drive.

## Sharing Files with External Users

- Create Employee-Specific Private Folders/Assign Permissions—Depending on the nature of your business and organizational structure, you may want to create a shared folder for each employee and give the respective employee Read/Write permissions for that folder.
- Create Shares for Vendors or Clients/Access Remotely—The built-in Remote Web Access feature enables collaboration on files and data not only among your employees but also with your clients and vendors.

  As a best practice, create a unique user account for each client and vendor you want to exchange data with and create a dedicated Shared Folder for each such external user. To prevent giving external users access to your sensitive data, make sure that the user accounts you create have the appropriate permissions for only the folders you have created for them.

  To start collaborating with your external users, just provide them with the domain address of your WD Sentinel server and their user name and password.

## Shutting Down

- Unclean shutdowns are hard on RAIDed systems. The WD Sentinel server recognizes an unclean shut down and upon the reapplication of power, begins a long sequence of examining the RAID for errors and bringing the RAID configuration back into alignment. This sequence can take many hours. To avoid this situation and to assure that the unit always experiences clean shutdowns and the best data integrity, use an Uninterruptible Power Supply (UPS).

  *Note:* Performance is affected during a RAID rebuild and verification.

- Before shutting down the server, stop any backups currently running.
- To avoid possible corruption, do not unplug the power from the unit while it is running.

8

# Troubleshooting

First Steps Checklist
Specific Problems and Corrective Actions

For any issue, first ensure that you are using the latest firmware for the WD Sentinel server. See “Updating Software” on page 24 for instructions.

## First Steps Checklist

- Is the power supply plugged in to the wall outlet and the drive?
- Are all cables correctly connected and secured?
- Is the power on? If not, see “LEDs” on page 13.

## Specific Problems and Corrective Actions

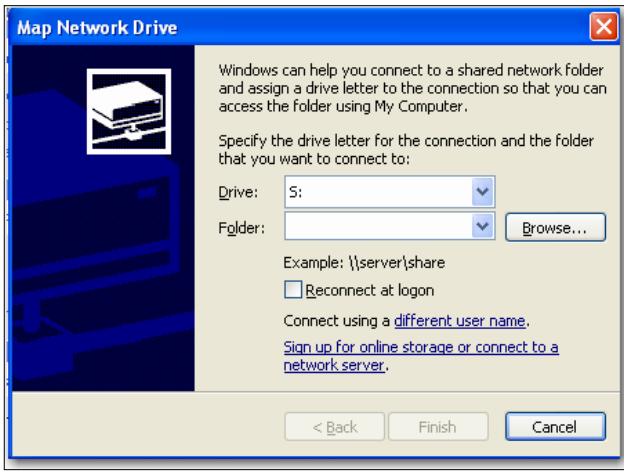
The following section contains specific problems that may arise during the use of the WD Sentinel server and provides possible solutions.

### LEDs do not light up

1. Make sure the power cord is connected correctly.
2. Make sure that the wall outlet has power. Test it by plugging in another device.
3. Confirm the network cable is properly connected to the WD Sentinel server and the network switch or router.
4. Make sure the network switch or router has power.
5. Use a different network cable and port on the network switch or router. Temporarily swapping the WD Sentinel’s cable port with a working network device may identify any failing cables and ports.

### Connecting to Shared Folders on a WD Sentinel server from a Windows PC on which Launchpad is not installed

1. Right-click (**My**) **Computer** and select **Map Network Drive**.


Map Network Drive
Windows can help you connect to a shared network folder and assign a drive letter to the connection so that you can access the folder using My Computer.
Specify the drive letter for the connection and the folder that you want to connect to:
Drive:
S:
Folder:
Browse...
Example: \\server\share
Reconnect at logon
Connect using a different user name.
Sign up for online storage or connect to a network server.
< Back
Finish
Cancel

2. From the **Drive** drop-down list, choose the letter that you want the WD Sentinel server to have in (**My**) **Computer.**

3. Click **Browse** to find the folder that you want to map, or type the path to the server using the format \\ServerName\FolderName. For example, if the share is called Documents, and your server is called MyServer, you would enter \\MyServer\Documents.
4. If you want the drive to reconnect whenever the computer is rebooted, click the **Reconnect at logon** check box.
5. Connect using a different user name and enter your user name and password for the WD Sentinel server.
6. Click **Finish**.

## Cannot access Windows PCs via Remote Access

Internet Explorer 8 or 9 is required to access a Windows PC using the Remote Web Access feature of the WD Sentinel server. There is an Active X Client requirement that comes standard with these browsers. For more information, see *Knowledge Base Answer ID 8578*.

9

# Regulatory and Warranty Information

Regulatory Compliance
Obtaining Service
Limited Warranty

## Regulatory Compliance

### FCC Class B Information

This device has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This unit generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. Any changes or modifications not expressly approved by WD could void the user's authority to operate this equipment.

The following booklet, prepared by the Federal Communications Commission, may be helpful: *How to Identify and Resolve Radio/TV Interference Problems*. This booklet is Stock No. 004-000-00345-4 available from the US Government Printing Office, Washington, DC 20402.

The provided Ethernet cable must be used between the unit and network connection to comply with FCC Part 15 Class B and EN-55022 Class B.

### ICES/NMB-003 Compliance

Cet appareil de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with Canadian ICES-003 Class B.

### Safety Compliance

Approved for US and Canada. CAN/CSA-C22.2 No. 60950-1, UL 60950-1: Safety of Information Technology Equipment.

Approuvé pour les Etats-Unis et le Canada. CAN/CSA-C22.2 No. 60950-1 : Sûreté d'équipement de technologie de l'information.

This product is intended to be supplied by a listed limited power source, double insulated, or direct plug-in power unit marked “Class 2.”

### CE Compliance for Europe

Verified to comply with EN55022 for RF emission; EN-55024 for Generic Immunity, as applicable; and EN-60950 for Safety.

## KC Notice (Republic of Korea only)

| 기종별 | 사용자 안내문 |
|---|---|
| B 급기기<br>(가정용방송통신기자재) | 이기기는가정용(B 급) 전자파적합기기로서주로<br>가정에서사용하는것을목적으로하며, 모든지역에<br>서사용할수있습니다 |

Class B Device 1. Please note that this device has been approved for non-business purposes and may be used in any environment, including residential areas.

## Environmental Compliance (China)

| 部件编号 | 铅（Pb） | 水银（Hg） | 镉（Cd） | 六价铬（Cr(VI)） | 多溴联苯（PBB） |
|---|---|---|---|---|---|
| PCBA | X | ○ | ○ | ○ | ○ |
| 适配器 | X | ○ | ○ | ○ | ○ |
| RJ45 电缆 | ○ | ○ | ○ | ○ | ○ |
| 螺丝 | ○ | ○ | ○ | ○ | ○ |
| 橡胶垫 | ○ | ○ | ○ | ○ | ○ |
| 金属 | ○ | ○ | ○ | ○ | ○ |
| 塑料 | ○ | ○ | ○ | ○ | ○ |

○：表示部件中不包含相应的物质，或者含量没有超出 SJ/T 11363-2006 法规中规定的同类物质的最大允许水平。
X：表示部件中相应物质的含量超出 SJ/T 11363-2006 法规中规定的限度

## Obtaining Service

WD values your business and always attempts to provide you the very best of service. If this Product requires maintenance, either contact the dealer from whom you originally purchased the Product or visit our product support website at *http://support.wdc.com* for information on how to obtain service or a Return Material Authorization (RMA). If it is determined that the Product may be defective, you will be given an RMA number and instructions for Product return. An unauthorized return (i.e., one for which an RMA number has not been issued) will be returned to you at your expense. Authorized returns must be shipped in an approved shipping container, prepaid and insured, to the address provided on your return paperwork. Your original box and packaging materials should be kept for storing or shipping your WD product. To conclusively establish the period of warranty, check the warranty expiration (serial number required) via *http://support.wdc.com*. WD shall have no liability for lost data regardless of the cause, recovery of lost data, or data contained in any Product placed in its possession.

## Limited Warranty

WD warrants that the Product, in the course of its normal use, will for the term defined below, be free from defects in material and workmanship and will conform to WD's specification therefor. The term of your limited warranty depends on the country in which your Product was purchased. The term of your limited warranty is for 3 years in the North, South and Central America region, 3 years in the Europe, the Middle East and Africa region, and 3 years in the Asia Pacific region, unless otherwise required by law. The term of your limited warranty period shall commence on the purchase date appearing on your purchase receipt. WD may at its discretion make extended warranties available for purchase. WD shall have no liability for any Product returned if WD determines that the Product was stolen from WD or that the asserted defect a) is not present, b) cannot reasonably be rectified because of damage occurring before WD receives the Product, or c) is attributable to misuse, improper installation, alteration (including removing or obliterating labels and opening or removing external enclosures, including the mounting frame, unless the product is on the list of limited user-serviceable products and the specific alteration is within the scope of the applicable instructions, as found at *http://support.wdc.com*), accident or mishandling while in the possession of someone other than WD. Subject to the limitations specified above, your sole and exclusive warranty shall be, during the period of warranty specified above and at WD's option, the repair or replacement of the Product with an equivalent or better Product. The foregoing warranty of WD shall extend to repaired or replaced Products for the balance of the applicable period of the original warranty or ninety (90) days from the date of shipment of a repaired or replaced Product, whichever is longer. The foregoing limited warranty is WD's sole warranty and is applicable only to products sold as new. The remedies provided herein are in lieu of a) any and all other remedies and warranties, whether expressed, implied or statutory, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose, and b) any and all obligations and liabilities of WD for damages including, but not limited to accidental, consequential, or special damages, or any financial loss, lost profits or expenses, or lost data arising out of or in connection with the purchase, use, or performance of the Product, even if WD has been advised of the possibility of such damages. In the United States, some states do not allow exclusion or limitations of incidental or consequential damages, so the limitations above may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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10

# Glossary

**CIFS**—Common Internet File System. The recommended file sharing protocol for Windows platform allows users to access shares through My Network Places.
Mac OS X or later also supports the CIFS protocol. See also Protocol.

**CLIENT COMPUTER**—A computer that accesses services made available by a server computer.

**DHCP**—Dynamic Host Configuration Protocol. A protocol for assigning IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address each time it connects to the network. In some systems, the device's IP address even changes while it is still connected. DHCP also supports a mix of static and dynamic IP addresses. See also Protocol.

**DLNA**—Digital Living Network Alliance. The group of consumer electronics, computing industry, and mobile device companies that sets standards for product compatibility, thus enabling users to share content in their home.

**DMA**— Digital Media Adapter. A device that gives home entertainment devices the ability to transfer media such as music, photos, videos to and from other devices over the network.

**DNS**—Domain Name Service. A system that allows a network name server to translate text host names into numeric IP addresses used to uniquely identify any device connected to the Internet.

**ESD**—Electrostatic discharge.

**Ethernet**—A standard method of connecting computers to a Local Area Network (LAN).

**File Transfer Protocol (FTP)**—A network protocol used to transfer data from one computer to another through a network. FTP is a popular choice for exchanging files independent of the operating systems involved.

**GreenPower™ Technology**—Engineering technology developed by WD to bring more energy-efficient hard drive options to our customers. WD hard drives with GreenPower technology yield average power savings of 4-5 watts over competitors' drives while maintaining solid performance.

**Host**—The computer to which other computers and peripherals connect.

**Host Interface**—The point at which a host and a drive are connected to each other.

**Host Transfer Rate**—The speed at which a host computer can transfer data across an interface.

**HTTP**—Hypertext Transfer Protocol. Protocol used by the World Wide Web to transfer information between servers and browsers. See also Protocol.

**HTTPS**—Hypertext Transfer Protocol over Secure Socket Layer. A protocol that provides a more secure means of configuring your device than HTTP, but may affect the responsiveness of the user interface. All traffic between the managing computer and the WD Sentinel server is encrypted. See also Protocol.

**Hub**—In a network, a device joining communication lines at a central location, providing a common connection to all devices on the network.

**Interface**—A hardware or software protocol to manage the exchange of data between a device and a computer; the most common ones are EIDE (also known as PATA), SATA, and SCSI. See also Protocol.

**IP**—Internet Protocol. A system that controls how data messages are separated into packets, routed from the sender, and reassembled at the destination. See also Protocol.

**IP Address**—A 32-bit, binary number that uniquely identifies a computer connected to the Internet.

**iTunes**—An audio playback program used to import songs and other media files from your hard drive or WD Sentinel server drive.

**LAN**— Local Area Network. A system in which computer users in the same company or organization are linked to each other and often to centrally-stored collections of data in LAN servers.

**LED**—Light-emitting Diode. An electronic device that lights up when electricity is passed through it.

**Media Server**—Device that stores and shares media files (digital audio, digital video, and digital photos).

**Media Storage**—Device that stores media files (digital audio, digital video, and digital photos).

**Multi-user**—A system in information technology that enables more than one user to access data at the same time.

**NAS**—Network Attached Storage. Hard disk storage that is set up with its own network address rather than being attached to the computer that is serving network workstation users.

**Network Computer**—A computer that communicates with a central data storage facility such as a server or RAID system.

**NFS**—Network File System. A network file system protocol that allows a user on a client computer to access files over a network as easily as if the network devices were attached to its local disks. Normally associated with UNIX systems. See also Protocol.

**NTP**—Network Time Protocol. A protocol for synchronizing the clocks of computers and equipment over a network. See also Protocol.

**Operating System**—Software that allows users and programs installed on your system to communicate with computer hardware such as a hard drive.

**Partition**—A logical division on a hard drive that the operating system treats as a separate hard drive. Each partition is assigned a unique drive letter.

**Port (Hardware)**—A specialized outlet on a device for connecting to other devices using a cable or a plug. Ethernet ports, power ports, and USB ports are examples.

**Protocol**— A convention of data transmission that defines timing, control format, and data representation.

**RAID**—Redundant Array of Independent Disks. A grouping of hard drives in a single system to provide greater performance and data integrity.

**RAID 0**— RAID protocol in which data is striped across multiple hard drives, enabling the accelerated reading and recording of data by combining the work of two or more drives to increase performance. See also Striping.

**RAID 1**— RAID protocol in which two copies of the data are instantaneously recorded: each on separate hard drives. RAID 1 ensures the protection of users' data because in the event that one of the hard drives fails, the other hard drive(s) will continue to read and write data until the faulty hard drive is replaced and rebuilt to once again safely mirror the data. See also Mirroring.

**RAID 5**— For systems with three or more drives, RAID 5 offers fast performance by striping data across all drives. It protects data by dedicating a quarter of each drive to fault tolerance, leaving three quarters of the system capacity available for data storage.

**RAID 10**— RAID protocol that requires a minimum of four drives to implement. Adds redundancy and fault tolerance, providing data striping on top of disk mirroring.

**RAM**—Random Access Memory. Memory that allows any storage location to be accessed randomly, as opposed to sequential access devices such as tape drives.

**ROM**—Read-Only Memory. An integrated circuit memory chip containing programs and data that the computer or host can read but cannot modify. A computer can read instructions from ROM but cannot store data in ROM.

**Share**—An area, similar to a folder or directory, set up to organize files and access them on your network. Shares can be Public, shared with everyone on your network, or Private, shared with only selected users on your network.

**SMB**—Server Message Block. File-sharing protocol for Windows platform that allows users to access shares through My Network Places. Mac OS X or later also supports the CIFS protocol. See also Protocol.

**SMTP**—Simple Mail Transfer Protocol. Standard for transferring email across the Internet. See also Protocol.

**Streaming Media**—Media such as audio, video, and photos that are constantly received while being delivered by a streaming provider.

**Striping**—The spread of data over multiple hard drives to improve performance. See also RAID 0.

**TCP/IP**—Transmission Control Protocol/Internet Protocol. A set of protocols for communication over interconnected networks. The standard for data transmission over networks. See also Protocol.

**UPnP**—Universal Plug n Play. A set of computer network protocols that simplify the implementation of networks in the home by allowing devices to connect seamlessly. See also Protocol.

**WAN**—Wide Area Network. A computer network that crosses metropolitan, regional, or national boundaries.

# Index


**A**

About tab 19
accessing Dashboard 17
accessing Launchpad
  Mac computer 35
  Windows PC 34
accessing shared folders
  via network 38
  via Remote Web Access 38
accessories 7
adding storage capacity 33
Administrator's tasks 15
alert icons 19
alerts 21
automatic backups 40
automatically updating WD software 25

**B**

back view 10
backing up
  using Dashboard 42
  using Launchpad 41
  Windows PC 40, 41, 42
backups
  automatic 40
bare metal restore 43
basic product information 19
best practices
  getting started 19
  replacing drives 54
  setting up client computers 53
  setting up WD Sentinel DX4000 53
  using efficiently 53
box contents 6

**C**

China RoHS 58
compliance 57
  regulatory 57
  safety 57
computers
  connecting 17
  Remote Web Access 38
Computers and Backups 20
Computers and Backups icon 40
connecting Windows PC to shared folders without Launchpad 55
cooling fan 21
Customer Support
  automatic request 23
  contacts ii

**D**

Dashboard
  accessing 17
  tabs 18
  tasks 18
description of WD Sentinel DX4000 4
document conventions 3
domain server
  joining 27
drives
  compatible 23
  lock/unlock 23

**E**

enabling Remote Web Access 26
environmental compliance (China) 58
external users' tasks 15

**F**

FCC Class B information 57
files and folders
  recovering 43
front view 10

**G**

GNU general public license 59

**H**

Health tab 21
help
  where to find 14
Help icon 18
Home page 18
  tabs 19
  tasks 20

**I**

ICES/NMB-003 compliance 57
icon
  Add-ins 21
  alerts 19
  Computer and Backups 20
  Computers and Backups 40
  Help 18
  Launchpad 34
  Monitor 21
  navigation 18
  Server Folders and Hard Drives 20
  Trash 38

User 20
increasing storage capacity 33
internal users' tasks 15

**L**

Launchpad
accessing on a PC 34
backing up 41
icon 34
managing 36
options 36
starting a backup 41
uninstalling on a Mac computer 38
uninstalling on Windows PC 37
lock password, changing 24

**M**

Mac computer, accessing Launchpad 35
managing the Launchpad 36
media library, accessing remotely 40
Microsoft software
updating 25
Monitor icon 21
monitoring system health 21

**N**

navigation icons 18
network connection health 21

**O**

office uses 16
online product registration ii
operating system requirements 8

**P**

package contents 6
password
Administrator 15
lock/unlock 23
password and user name 15
power supplies 21
product registration ii

**R**

RAID storage 29
recovering the WD Sentinel server 45
reference resources 13
registration, online ii
regulatory compliance 57
Remote Web Access 26
accessing computers and shared folders 38
media library 40
replacement drives 23
replacing a drive 31
requirements
operating systems 8
server recovery 45
restoring data and settings 43
RoHS 58

**S**

safe shutdown 27
safety compliance 57
scheduling WD software updates 25
server
setting up 17
server folders 20
server recovery 45
requirements 45
server settings
domain servers 27
general 26
homegroup 26
managing 25
media 26
service
obtaining 58
shared folders
accessing over the network 38
accessing remotely 38
Remote Web Access 38
shutting down safely 27
specifications 9
storage 21
managing 29
RAID 29
USB 30
system health 21
system temperature 21

**T**

tabs
Home page 19
Updating Software 24
tasks
Dashboard 18
Health 21
Home page 19
tasks pane 18
technical specifications 9
Technical Support contacts list ii
temperature 21
Trash icon 38
troubleshooting

cannot access Windows PCs via Remote Access 56
checklist 55
drive not connecting to network 55
LEDs do not light up 55

**U**

Underwriters Laboratories Inc. (UL) 57
updating Microsoft software 25
updating WD Software 24
USB
sharing files and folders 30
storage 30
user accounts 15, 20
user assistance 13
users
external 15
internal 15
Using 34

**W**

warning
lithium battery 2
unclean shutdown 28
WD Guardian Services 19
WD limited warranty 59
WD Sentinel DX4000
components 11
using locally and remotely 16
WD Service 58
WD software
automatic updates 25
manual updates 24
updating 24
Windows PC
backing up 40
backing up via Dashboard 42
backing up via Launchpad 41
restoring 43

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Western Digital Corporation
3355 Michelson Drive, Suite 100
Irvine, California 92612 U.S.A.

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